

# FACETS OF ROAD ECONOMICS

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"THE TIMES" OF THE TRANSPORT WORLD

# BAD WEATHER LANDINGS

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LONDON, OCTOBER 25, 1958

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## Critical Time for Railways

**S**PEAKING at a dinner given on October 17 by the British Transport Commission at the Great Eastern Hotel, London, for European Ministers of Transport who have been in conference in this country, Sir Brian Robertson, chairman of the British Transport Commission, told his guests that they were visiting British Railways "at a critical and difficult time." He said: "Large sums are being spent on modernisation, but they have scarcely begun as yet to pay dividends. There is little profit to be had from a scheme of electrification when only a small part of it is complete; only when the whole section is turned over to electric traction does it produce the large reward. There is little profit to be had from putting a score of diesel locomotives on to a section which requires 200. Only when all steam has been eliminated from that section do the big results appear. That is why it is so important that modernisation, once started, should be pressed forward steadily and swiftly. The present time is a difficult one in another way. Instead of selling and moving freely, coal is being put to stock in large quantities. The steel industry also is producing very considerably below capacity and below the level of 1957. This situation is, of course, not peculiar to this country. In this very week the problem of surplus coal stocks has been the subject of special meetings in Luxembourg. The fall in the level of steel production has caused anxiety both in the United States and Europe."

## The Bread of Life

**T**RAFFIC from these industries was the very bread of life to railways, said Sir Brian, "I have just returned from the Railway Congress in Madrid, and I found that the situation is causing grave concern to a number of my colleagues on the continent as it is to me. Many of the railroads of the United States are also affected with freight traffic down by 15 to 20 per cent," he continued. "The experts assure us that the situation is a temporary one and will improve. No doubt this is so. However, British Railways has no resources to cushion them against the effects of such a sudden blow, and it is hurting a lot." Sir Brian was proposing the toast of "The European Conference of European Ministers of Transport," to which replies were given by Mr. Harold Watkinson, the British Minister of Transport, this year's president of the council, and by His Excellency Armando Angelini, the Italian Minister, who is the immediate past-president. The conference, which is normally held in the country of the Minister who is president for the year, was attended by the Ministers of Transport of 17 European countries. It is the first time that the conference has been held in Britain. In view of the traffic situation here the presentation to industrialists and traders of the latest methods on British Railways and British Road Services in an exhibition at Battersea from October 30 onwards (open to the public from November 1 to 5) is most timely; door-to-door service improvements will be the main theme, but mechanised handling will also be seen.

## Fifty Years in Electric Lighting

**C**ELEBRATING the golden jubilee of its formation in Britain to exploit and market the inventions in the electrical field of R. B. Benjamin, the distinguished American, Benjamin Electric, Limited, can also mark this year as the fortieth since it moved from its original Central London premises in Rosebery Avenue, to the site in Tottenham upon which it has, as the years have gone by, established its large and modern plant. The company has concerned itself particularly with electric light fittings and especially those required for industrial purposes, but it is right to remember that it has also made successful forays into other fields when it had spare capacity available. These have included motor horns and radio loudspeakers. If it comes to that it also contributed notably to equipment required by

the Services in the 1914-18 and 1939-45 wars. The postwar reconstruction programmes brought in their turn the problems and then the satisfactory solution for lighting power stations, including the atomic variety, the illumination of airports and marshalling yards and many calls upon the illuminating engineering service which the company maintains. Expansion at the works has kept pace with the demands, but perhaps the most significant development was the completion three years ago of the new research building, which was described in MODERN TRANSPORT at the time. The benefits have already shown themselves and there are undoubtedly more to come in perpetuating a name of major standing in the electrical field.

might have to disappoint. The paramount importance of shipping to the nation was recognised by the Government, he said. Meanwhile the Shipbuilding Conference has warned of the possibility of "serious unemployment in certain areas" in the absence of orders for new ships.

## A New British Industry

**R**ECENT opening of a £6 million plant at Hythe, in Hampshire, by the International Synthetic Rubber Co., Limited, marks the establishment of a new British industry that is expected to make this country entirely independent of overseas sources of supply, and thereby effect a saving of some

often been criticised in recent years for their neglect of this problem, the former London Midland and Scottish Railway did, in fact, make an important beginning with its apprentices' training school at Derby before the 1939-45 war, and but for that misfortune and its aftermath, there is no doubt that similar centres would by now have become more widely established than they are. Wisely, the task of training young potential craftsmen is now regarded as an integral part of the railway modernisation scheme, and every endeavour is being made to treat it as a priority, so that in future the railway service will not suffer, as it has done, from the arbitrary fluctuations of the labour market.

## Education for Craftsmanship

**T**HE opening on October 15, by Sir Philip Warter, chairman of the Southern Area Board, of the first apprentices' training school on the Southern Region of British Railways is, therefore, greatly to be welcomed. Established at Eastleigh Locomotive and Carriage Works in a fine new building equipped with the latest workshop and classroom facilities, it can offer some 50 boys of school-leaving age a year's training preparatory to taking up craft apprenticeships at the age of 16. The course is designed to sift the natural aptitudes of each boy. Apart from the basic training, the curriculum includes such subjects as industrial history, science and English, together with talks on a variety of subjects given by lecturers supplied through the Hampshire Education Committee. In this way it is hoped to broaden the field of knowledge of the apprentices and develop an outlook which will help them to become self-reliant craftsmen with a sense of industrial discipline and responsibility. Wages are paid during the training, and further continuation in railway service is not obligatory—this is to encourage boys who, from necessity or choice, might otherwise drift into casual employment and an unskilled future. No less important, by training these lads the school is supplementing the already overtaxed resources of technical education in the area, thereby providing a higher potential of skilled craftsmen than would otherwise be possible. There is nothing altruistic in this; it is, in fact, a fairly typical enterprise which affirms the growing importance of industrial education—which, we venture to think, is as yet still in its infancy.

## Motor Industry Progress

**S**ATISFACTION with recent governmental activities was expressed by Mr. Reay Geddes, president of the Society of Motor Manufacturers and Traders, when welcoming guests at the traditional eve of the Motor Show dinner in London this week. Amongst Ministerial recipients of bouquets were the President of the Board of Trade and his colleagues "for all they have been doing for co-operation and development in the Commonwealth"; the Minister of Transport—"the pace of motorway construction is at last showing the world what the British contractor and his equipment really can do"; the Minister of Power for his efforts to satisfy "a power-hungry country"; and the Paymaster-General, Mr. Reginald Maudling, who responded to the toast "H.M. Ministers." The motor industry, said Mr. Geddes, was one of the ascendant industries, and it would seem odd if the country continued to restrict them or induced sudden swings in their level of activity as a lever on the economy as a whole. Inland transport costs affected exports and the cost of living. It was wise, therefore, to modernise railways and roads, but how odd to increase road operating costs "by taxes designed to keep the fleet smaller or older than it otherwise might be, while the producing industry is working well under capacity and its exports suffer as a result." With the growth of competing foreign motor industries, ours should grow at such a rate that production at least equalled that of any other European country. The industry would in fact aim to export from 40 to 50 per cent of its total production. As to the home market, "would it be too unreasonable to aim for one family in two to be running a car in about 10 years?" asked Mr. Geddes.

# CURRENT TOPICS

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## Chancellor and British Shipping

**T**HE immediate outlook for British shipping is none too bright; unremunerative freight rates prevent even the most modern ships from operating profitably on oil or bulk cargoes. Of nearly seven million tons of merchant dry-cargo and oil-carrying tonnage which has for some months been lying idle, 1,250,000 tons gross is British-owned. Additionally, there is the ever-pressing problem of flags of convenience, represented by foreign ships, registered in Panama, Honduras, Liberia and Costa Rica, which pay virtually no tax on their profits. At the U.K. Chamber of Shipping dinner in London recently, Mr. Robert D. Ropner, president of the Chamber, said the answer to the problem must be found in the field of taxation. It was not possible in the long run for shipowners who were taxed to compete with those who were not. No other British industry had to meet tax-free competition, and the question was causing increasing anxiety. Recently the United States had made great use of the flag of convenience with the object, in the main, of reducing operating costs. The trend in that country in applying subsidies both for operating and building of vessels had increased by leaps and bounds. "British shipowners," stated Mr. Ropner, "accept wholeheartedly the necessity for the U.S.A. to have a large and efficient mercantile marine. But for them the main consideration is that of military necessity in time of war; for Britain it is also an economic necessity in time of peace." Mr. Heathcoat Amory, Chancellor of the Exchequer and guest of honour at the dinner, said he would certainly be looking at the position of the shipping industry along with that of all taxpayers when considering his budget in the early months of next year. He would gladly talk with their representatives about it before making up his mind whether there was anything more he could legitimately do. But he uttered the proviso that it would be quite wrong to hold out any hopes that he

\$25 million a year. Originally the large-scale manufacture of a general-purpose synthetic rubber was developed in Germany and America to meet the pressure of wartime conditions, but subsequently production has risen to a million tons per annum which is rather more than half of the world production of natural rubber. In the main this is because natural rubber production has failed to keep pace with the steadily increasing demand, but it is also of importance that synthetic rubber has certain inherent qualities which for specific purposes make it superior to the natural product or valuable for use therewith. Because of its resistance to abrasion it has long been used in the manufacture of vehicle tyres, and for the present it is intended that the main output of the Hythe plant will be used for this purpose. The plant has a capacity of up to 70,000 tons a year, and will manufacture rubber of the type known as styrene-butadiene—the latter substance is the principal ingredient and is conveniently supplied as a waste product of the nearby Fawley refinery operated by the Esso Petroleum Co., Limited. In spite of the heavy initial capital outlay, production costs compare favourably with that of natural rubber, and since the demand for the synthetic material has risen in the United Kingdom by 2,240 per cent since 1947, the prospects of this new industry are abnormally bright.

## Vocational Training

**D**UE to the relative inflexibility of their wage structure, it has long been the Achilles heel of railway workshops that in times of industrial expansion they may suffer a serious depletion of skilled labour. Superficially this may appear to be inevitable, but long experience on the French railways and in many other industries has shown that the conservation of skilled labour is best achieved by training schemes which at an early age imbue a sense of vocation. Although in this country the railways have



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*The Editor is prepared to consider contributions offered for publication in MODERN TRANSPORT, but intending contributors should first study the length and style of articles appearing in the paper and satisfy themselves that the topic with which they propose to deal is relevant to editorial requirements. In controversial subjects relating to all aspects of transport and traffic this newspaper offers a platform for independent comment and debate, its object being to encourage the provision of all forms of transport in the best interests of the community.*

## ★ Facets of Road Economics

MEXICO City will be the venue, this coming weekend, of the third world meeting of the International Road Federation, the business sessions of which will continue until October 31. Previous world meetings of this energetic and valuable body, now 10 years old, have been held in Washington in 1952 and in Rome three years later. Delegates from 60 countries and representatives of a large number of international bodies, including the United Nations, the Economic Commission for Latin America and the International Chamber of Commerce, will be welcomed by the President of Mexico. The British delegation is being led by Mr. C. T. Brunner, vice-chairman of the British Road Federation. He will preside at the session dealing with economic and social aspects of roads and road transport, for which Mr. A. R. de Beer (B.R.F.) is rapporteur and at which Mr. C. B. Nixon, a past-president of the S.M.M.T. and well-known for similar studies when he was Leyland chairman, will elaborate the economic advantages of developing road systems capable of allowing modern goods and passenger vehicles to operate to the maximum of their efficiency. As Sir Reginald Biddle, chairman of the London office of the I.R.F., mentioned on Monday of this week, one of the main reasons for meeting in Mexico is the intensity of that country's road improvement programme and the opportunity of seeing at El Olivar one of the world's most ambitious projects for training engineers and operators of modern road building machinery, as a result of which a high mileage of farm-to-market roads have greatly benefited the nation.

### Alleviation

IN this country the authorities have at last been seized with the importance of road construction, as a result of which British contractors and roadmaking machinery builders will no doubt reap some benefit in overseas markets; as in all other export sales there is nothing like a home demand and something good in the shop window at home to stimulate orders from abroad. As the Minister of Transport, Mr. Harold Watkinson, was telling the members of the London and Home Counties Division of the Traders Road Transport Association, also on Monday, there are not only the schemes for betterment of intercity communication by road modernisation and by the construction of new motorways, but there are also a number of schemes for the overcoming of bottlenecks inside cities—the trans-Birmingham motorway link described on page 3 is one example—in London he referred to the Hyde Park Corner underpass, the Elephant and Castle scheme and the Notting Hill Gate improvement among others. The Minister has well in mind that urban distribution of traffic is as important as its swift transit between the great centres of population, for there can be no economic dividend from a motorway with a bottleneck at each end of it, but he refuses to countenance wholesale destruction of city centres to make room for new roads. There will be no disagreement with him on this, but the difference of our situation from that in countries such as America calls for special measures of alleviation.

### Feather in the Cap

IT is a feather in the cap of the London and Home Counties Division of the T.R.T.A. that its traffic committee, stout opponent of the no-waiting proposals for

## MODERN TRANSPORT OCTOBER 25, 1958

commercial vehicles near congested road junctions in the Metropolitan area, has hit upon such an alleviation and was able to enlist the services of Mr. Watkinson in launching a campaign under the title of "Kerb Space is Precious," or "Speed the Van from the Kerb." This is a sensible code which will enable those who make use of motor vehicles for business or pleasure to do so in a way which will interfere as little as possible with the equally legitimate demands of other road users, says the Minister. Owners of business premises on busy thoroughfares and their suppliers throughout the area are being urged to adopt this voluntary code of behaviour to avoid the onerous restrictions that otherwise must prove almost inescapable. The rules are simple:

### When You Deliver Goods:

1. If you load in a busy street, position the vehicle only when ready to load. After loading get it away.
2. Plan loading order and routing to avoid the busiest streets in peak traffic hours wherever possible.
3. Instruct your drivers not to stop in busy streets a moment longer than is essential.
4. Encourage them always to use a side or back entrance if possible.
5. Study methods of reducing delivery times, e.g., (a) type of vehicle, (b) design and position of van doors, cab doors, etc., (c) handling equipment such as light rollers, conveyors or handtrucks.
6. Invite your customer to co-operate by: (a) accepting delivery as near to the entrance as practicable, (b) having returned empties prepared and readily available, (c) signing delivery notes without delay, (d) placing larger orders, with less frequent deliveries, (e) facilitating delivery in any other way.

### When You Receive Goods:

1. Arrange for the driver to use a side or back entrance in a less busy street, if available.
2. Accept deliveries as near the entrance as practicable.
3. Facilitate delivery in every way possible.
4. Sign for goods as quickly as possible.
5. Have returned empties prepared and readily available.
6. Minimise the frequency of deliveries by ordering the largest quantities you can safely stock.
7. Co-operate with your suppliers on delivery times.
8. Invite your suppliers to co-operate in any other way which would be mutually helpful.
9. If you use a vehicle to redeliver from your premises do not have it brought round until you are ready to load.
10. Above all—see that vehicles are not kept waiting for attention at the kerbside outside your premises.

It is most satisfactory that the T.R.T.A. has secured the active support of a large number of traders' associations in pressing this campaign.

### Using Road Space Economically

THE scheme was announced at the Division's autumn luncheon, presided over by Mr. F. H. Layton, who cogently reminded his audience of the proposals for restriction on 23 sites, mostly around junctions inadequate to deal with the traffic flow. It was a source of gratification that after inquiry the Minister accepted the recommendation not to impose the ban, but it was felt that as an Association the T.R.T.A. should show its awareness of the tremendous problem facing the Minister in the London streets. Until there could be more road space, what was available must be used more economically, hence the campaign. If they could not speed the vehicles from the kerb, then more time would be needed for deliveries and more vehicles would have to use the roads, adding to congestion and raising distribution costs. No fewer than 100,000 leaflets are being issued to support the campaign. Mr. Layton also welcomed the parking meter scheme, which had already shown miraculous results. In welcoming the guests he was supported by the president of the T.R.T.A., Mr. S. C. Bond, who hoped that if the campaign succeeded the principles might find wide acceptance throughout the country. Everyone could join in the scheme and give help to it and it was an excellent thing that it was being launched under the auspices of the Minister. The two facets of highway economics—the one eagerly reaching out to new schemes to keep up, if possible, with traffic demands and the other soberly making the best use of limited facilities—are worth pondering upon.

## ★ Forthcoming Events

- October 25.—Light Railway Transport League. Paper by Mr. W. J. Wyse, "The Interurban in Europe." At 133 Drummond Street, N.W.1. 3 p.m.  
Institution of Railway Signal Engineers (Bristol). Visit to Westinghouse Works, Chippenham.  
Omnibus Society (Northern). Paper by Mr. G. McKay, "Vehicle Maintenance." At Darlington. 6.30 p.m.  
October 26-31.—International Road Federation world meeting. At Mexico City.  
October 27.—Institute of Road Transport Engineers (Scottish). Paper by Mr. R. D. Lister, "Research on the Testing and Performance of the Commercial Vehicle Brakes." At North British Hotel, Princes Street, Edinburgh. 7.30 p.m.  
October 28.—Institute of Transport (Metropolitan G. and S.). Paper by Mr. R. C. Hider, "Operating Practice on the Railways of London Transport." At 80 Portland Place, W.1. 6.15 p.m.  
Institute of Transport (Scottish). Paper by Mr. W. F. Quin, "The History and Functions of the Traffic Commissioners." At North British Hotel, Edinburgh. 6 p.m.  
Institution of Civil Engineers. Paper by Mr. C. F. Colebrook, "The Flow of Water in Unlined, Lined and Partly Lined Rock Tunnels." At Great George Street, S.W.1. 5.30 p.m.  
Industrial Transport Association. Paper by Mr. L. S. J. Keays, "British Railways Freight Services with the Continent." At Royal Society of Arts, John Adam Street, W.C.2. 6.30 p.m.  
Institution of Electrical Engineers. Discussion opened by Mr. D. T. N. Williamson, "Electronic Control of Machine Tools." At Savoy Place, W.C.2. 5.30 p.m.  
Omnibus Society. Paper by Mr. H. Thunell, "American Greyhound Corporation." At Victoria Coach Station, S.W.1. 6.45 p.m.  
Railway Correspondence and Travel Society (East Midlands). Paper by British Railways official, "Rates, Fares, Branch Line Working, etc." At Toll Street, Nottingham. 6.30 p.m.  
October 30.—Institution of Highway Engineers (East Anglia). Annual dinner.  
October 31.—Institution of Mechanical Engineers. Paper by Mr. W. Johnson, "The Estimation of Upper Bound Loads for Extrusion and Coining Operations." At 1 Birdcage Walk, S.W.1. 6 p.m.  
November 1-5.—British Transport Commission. Public days of exhibition of road and rail freight handling equipment. At Battersea Wharf goods depot, London. 10 a.m.-4 p.m. (2 p.m.-4 p.m. on Sunday).  
November 5-16.—International Motor Show. At Turin.



# PROGRESS REPORT ON NEW ROADS

## Midland Motorway Link Proposed

### ROAD TO BE CARRIED ON THREE-MILE VIADUCT

ENCOURAGING news of progress with the country's road programme, which aims eventually to create a national network of modern trunk roads and on which £240 million is being spent in the first four years, was given by Mr. Harold Watkinson, Minister of Transport and Civil Aviation, at a news conference, as we briefly recorded in our last issue. The present programme was launched in 1954-55, at which time there had been virtually no major road construction for 15 years. Since then, 51 miles of trunk road have been built or rebuilt to modern standards, work is proceeding on a further 194 miles and forward planning has been started on 856 miles, in addition to many major schemes designed to alleviate congestion in urban areas for which local highway authorities are responsible.

#### Five Major Schemes

As most of our readers will already be aware, the Government has given first priority to five major projects, on four of which work has already started. Work on the fifth is expected to start in the spring. First of these five projects is the intention to provide dual carriageways on 168 miles of the Great North Road between London and Newcastle.

To implement this, congested areas such as Stevenage, Biggleswade, Stamford, Grantham, Doncaster and Wetherby will be bypassed and work at all of these places should start next year. So far, to the 18 miles of dual carriageway on A1 before 1955, a further 21 miles have been added and work on 27 miles has been started. When these schemes and those now being prepared are finished all but 35 miles of the London-Newcastle road will be double track and that 35 miles, which is already 30 ft. wide or more, will be doubled later.

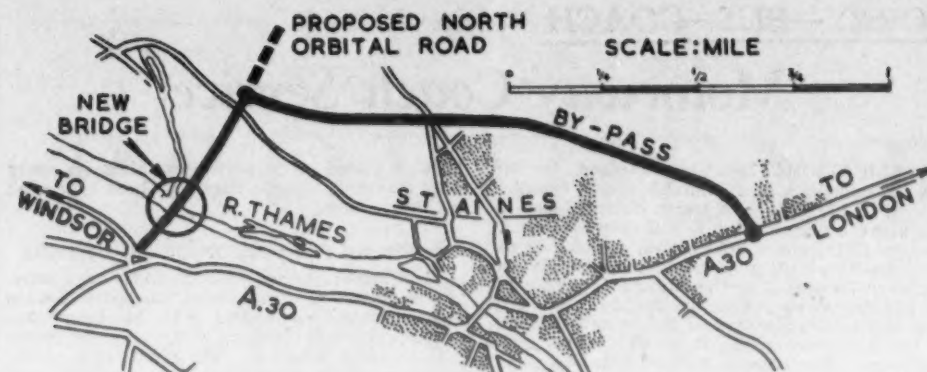
The object of the second project is the provision of a dual-carriageway motorway from Finchley to north of Lancaster by means of the London-Birmingham and Birmingham-Preston motorways, the Preston and Lancaster bypasses and a proposed Midland motorway link (which will be described later). Work on the London-Birmingham component, which is scheduled to be finished this time next year, is ahead of schedule, and construction of the Lancaster Bypass is going well. Preston Bypass, an eight-mile motorway, is to be opened by the Prime Minister on December 5. Preparations are well advanced for building the 95-mile motorway linking Birmingham and Preston and it is hoped to start work on viaducts in Staffordshire and Lancashire next spring, while a draft scheme fixing the line of the motorway between Preston and Lancaster should be published next year.

#### Channel Ports Roads

With the projected European Free Trade Area in mind, project No. 3 provides for the improvement of the existing trunk roads between London and the south-east coast, bypassing the Medway

road to Canterbury and an inner relief road in Canterbury itself to take the trunk road traffic away from the centre of the city. The Dartford-Furber Tunnel now under construction will provide a link between the new A2 and Essex.

The fourth project will provide a motor road between the Midlands and South Wales. A 20-mile section between Ross-on-Wye and Upton-on-Severn, known as the Ross Spur, is already under construction, as is the Ross Bypass; plans for the section between Upton-on-Severn and Lydiate Ash are well advanced and it is hoped to start work on it in the next financial year. From Ross, the



Plan showing Staines Bypass, which will be built on an embankment for almost the whole of its two-mile length, and site of new bridge and proposed North Orbital Road

Birmingham from London, Preston and South Wales and the Minister's consultants, Sir Owen Williams and Partners, have just completed their investigations and have recommended a common meeting

work is proceeding on a number of overloaded existing trunk roads. These include London-Exeter (A30), London-Ipswich (A12), London-Tilbury (A13), London-Oxford (A40), Stafford-Newcastle-under-Lyme (A34), Lichfield-Derby (A38) and Derby-Nottingham (A52). On A30, the biggest project is the bypassing of Staines, on which it is hoped to start work next year. Some idea of the complexity of this scheme can be gained from the facts that it will be built on an embankment for almost its whole length of just over two miles and will cost nearly £2½ million compared with an average cost of some £300,000 per mile of ordinary double-carriageway road.

One aspect of the road programme on which the Government and the Minister are still being strongly criticised by road traffic partisans is that concerned with the relief of congestion in urban areas. Indeed, only two days after Mr. Watkinson's progress report was given to the Press, the Roads Campaign Council published a new booklet entitled *New Ways*, pointing out that, however good the long-distance roads, most journeys begin and end in a town, and saying that lamentably little was being done to relieve the tangle of long-distance and local traffic in our towns. The booklet takes Burnley, Middlesbrough and Reading as examples. It says that local authorities know their problems and know the answers. Many of them have prepared comprehensive schemes for essential road works but they cannot go ahead without government authority and financial support where this is fair and necessary, and in the main such authority and finance are not forthcoming.

#### Urban Traffic Relief

Nevertheless, the Minister was able to report progress in this direction also and said that wherever one went in London work could be found in hand or in preparation—the Cromwell Road Extension, the Elephant and Castle roundabout scheme, the Park Lane scheme and Route 11 through the City were obvious examples. In the provinces, planning was going ahead on the Tyne Tunnel, which was expected to cost £12½ million, and many large towns had started work, or hoped to do so in the next year or two, on ring and relief roads and bypasses, costing millions of pounds.

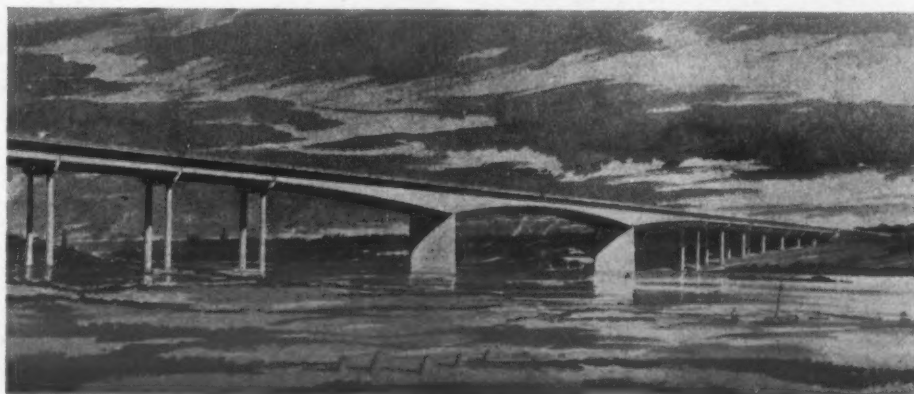
The road works now going on were the outcome of years of unspectacular background work. It took three or four years and sometimes longer to bring a large trunk road scheme to the contract-letting stage. The long preparation was due to statutory procedures, but these were designed to protect the rights of individuals and could not be shortened except at the expense of those rights. The most difficult task of all was to ensure that traffic was not bogged down when it reached industrial areas and, to study the problems involved, a special



Progress on the London-Birmingham Motorway: Excavation for abutments for bridge where motorway passes under the railway with new bridge on realigned Northampton-Towcester (A45) road beyond and, right, construction of flood arches of southern viaduct of River Nene near Northampton-Weedon (A5) road

roads leading to South Wales will be improved, including Heads of the Valleys Road (A465), which will be almost completely rebuilt. It is proposed to incorporate in the road parts of the

point for the three roads just south of Walsall. The recommendations include the building of some three miles of the western connecting link on a viaduct above the railway line through



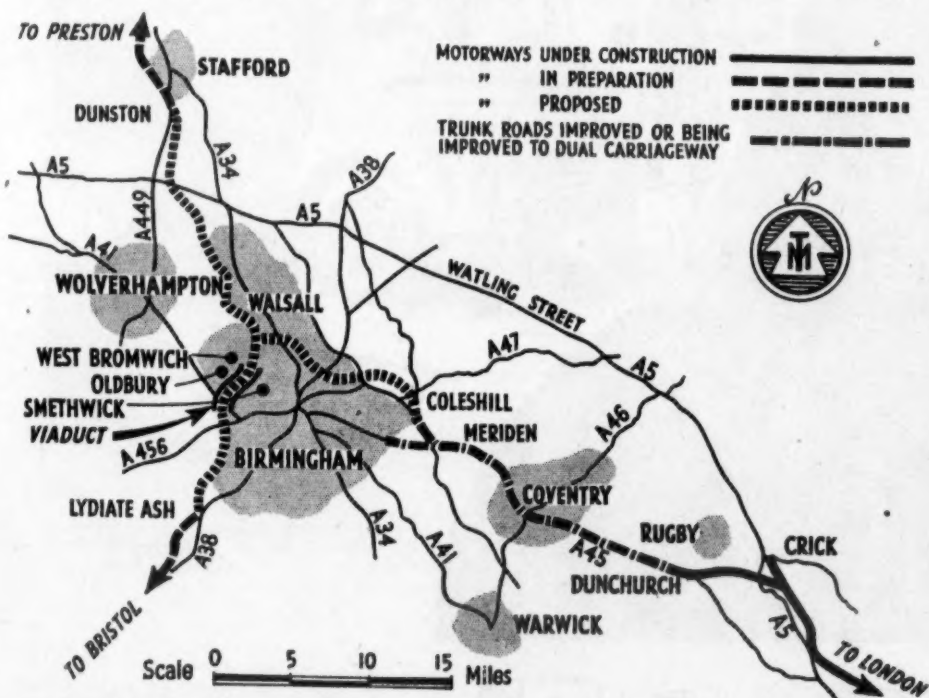
Artist's impression of new bridge to carry the Medway Motor Road over the River Medway. It will be about 100 ft. above the river, with a 500-ft. main span and approach viaducts on each side and is expected to cost over £2 million

railway line between Merthyr and Abergavenny, recently closed by British Transport Commission.

#### Chiswick Flyover Link

Project No. 5 is for the London-South Wales Motorway, which includes an 11½-mile section bypassing Slough and Maidenhead, on which it is hoped to start work in the spring, and an elevated

Smethwick and Oldbury and south of West Bromwich. This viaduct, to maintain the necessary headroom over the railway track and clear existing roads bridged over the railway, would have to run at a fairly uniform height of about 45 ft. above rail level. British Railways, which is helping in the examination of the project, regards it as feasible. The proposed eastern link would pass at



Plan of proposed Midlands link-up of three motorways now under construction showing position of three-mile viaduct to carry motorway over built-up areas of Smethwick and Oldbury

towns on A2 and Maidstone and Ashford on A20. The Ashford Bypass is already in use and constructional work on the Maidstone Bypass has started. Planning is almost completed for the building of dual three-lane carriageways on A2 from the Woolwich boundary to the projected 25-mile Medway Motor Road, the line of which has been fixed and which includes a new crossing of the Medway by a bridge 100 ft. above the river with a 500-ft. main span. There will be dual carriageways from the southern end of the motor

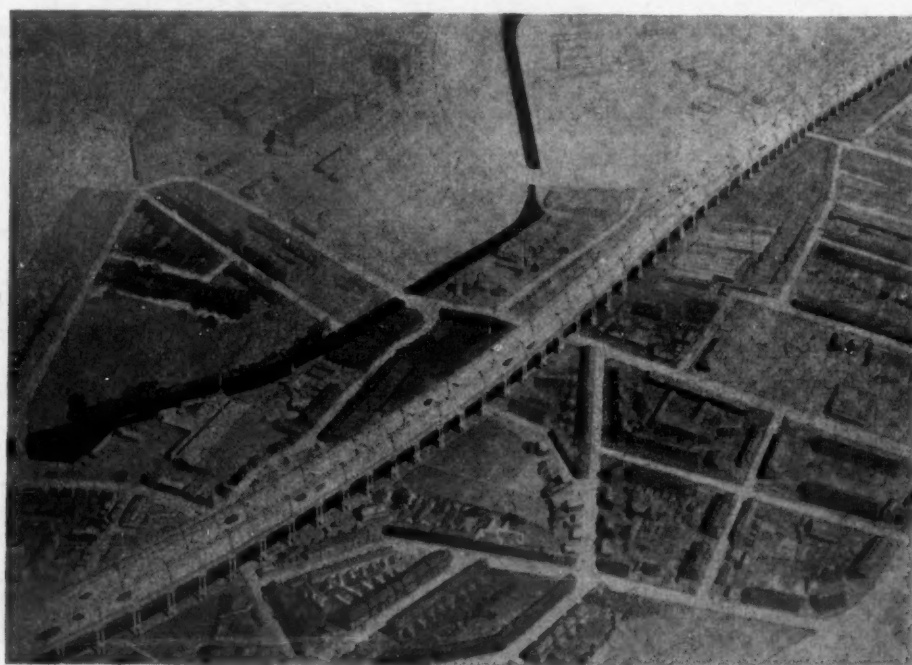
road built above the existing Great West Road at the London end, with a spur to London Airport. A new proposal for this road is to link the elevated section with the Chiswick Flyover, which is due for completion next year, and the necessary modifications to the design of the flyover are now in hand. At the Welsh end, plans are being completed for the Severn Bridge, the building of which is to be phased in with that of the Forth Bridge. A great deal of thought has been given to linking the three motorways converging on Bir-

mingham and to avoid major demolition of property it is proposed to culvert about 1½ miles of the River Tame and carry the road on the culvert.

Progress with a sixth major project, the extension of the London-Birmingham Motorway to Yorkshire, has been delayed due to objections to its proposed routing through the Charnwood Forest area. Recommendations for an alternative alignment have been made by Leicestershire County Council and these are now being examined. In addition to these major projects, which form only the foundation of a modern road system,

committee on London roads had been set up under the chairmanship of Mr. Nugent, Joint Parliamentary Secretary to the Ministry of Transport and Civil Aviation. Authorities in the largest provincial centres were being encouraged to consider their problems in a similar way.

Mr. Watkinson thought that these problems could be solved by subterranean or elevated roads rather than by building new urban motorways. The proposed viaduct over the railway at Smethwick and Oldbury appeared a promising solution and might well provide a pattern for solving the traffic tangles in London and elsewhere.



Artist's impression of the proposed viaduct over the railway line carrying the connection between the Birmingham-Preston and South Wales motorways



## LORRY—BUS—COACH

## Motorway Coach Service

APPLICATIONS have been lodged by the Birmingham and Midland Motor Omnibus Co., Limited, with traffic commissioners in the areas concerned for a new express service between Birmingham and London, routed over the London-Birmingham motorway, which is expected to be opened in the autumn of next year. On this motorway the service would operate non-stop and take advantage of the 65 miles' length of the motorway where there will be no speed restriction. The present Midland "Red" London services, operating over various routes, take 5½ hr. The proposed new service is timed to complete the journey from Digbeth coach terminal in Birmingham to Victoria coach terminal in London in 3 hr. 25 min. An application has been lodged also for duplicate coaches to the existing services, carrying through passengers only, to be routed via the new motorway at the proposed new timing.

## Looking for a Lothian

ONE of its former Lothian buses or coaches is being sought by Scottish Omnibuses, Limited. It is believed that there are several of these early vehicles still in use as caravans or sheds in various parts of Scotland.

## Additions to Ceylon Fleet

WITH the arrival of 60 Albion Aberdonian buses imported from the United Kingdom, the Ceylon Transport Board has now 650 new buses since nationalisation on January 1. These new Albion buses, which have a passenger capacity of 54 seated and 12 standing, will strengthen the Board's fleet of buses based at Galle, in the south of Ceylon.

## Free-For-All Transport Foreseen

SPEAKING in a debate on car park charges, Alderman W. E. Body, chairman of Hull City Town Planning Committee, said he was of the opinion that personal transport in the city would ultimately have to be "totally municipalised"—car users would have to leave their cars outside the city boundary and travel on buses into the business area. Transport would be free for everybody (except the ratepayers, that is—EDITOR).

## Cardiff Fares to Rise?

BUS fares at Cardiff may have to be increased. This warning was given recently by the city treasurer (Mr. R. L. Davies) and the transport manager (Mr. J. F. Siddall). Mr. Davies told a meeting of the city transport committee that during the 10 summer weeks—the best for income—there was a small profit of £2,686, which reduced the deficit for the period between April 1 and August 30 to £1,695. The summer income included an extra £2,500 taken during the Empire Games. In his annual report Mr. Siddall stated that the fall in income was chiefly due to the "changed habits of the travelling public." The last fares increase was in December, 1956, and wage awards "of considerable magnitude" had since been absorbed instead

of being passed on to passengers, although many other transport undertakings had been compelled to increase fares.

## Provincial Men Awarded 7s. Increase

AN award of 7s. per week on basic wage rates, 2s. more than the London Transport Country area settlement earlier this year, has been made to provincial bus company workers by the Industrial Disputes Tribunal. The claim for a contributory pensions scheme has been rejected. The Tribunal has also acceded to the claim for time and a quarter rates for night maintenance workers.



An attractive Peak District setting for a Thames Trader van on the road near Bakewell; right, Leyland Octopus and trailer hauling the products of British Ropes, Limited

The employers' wage offer in this dispute had been 5s. per week. The Transport and General Workers' Union has called a conference of delegates for November 18 at which the repercussions of the award, and particularly its effect on differential rates, will be considered. Mr. John Wills, managing director of the B.E.T. group, told MODERN TRANSPORT that the award already announced would almost inevitably mean higher fares, reduced services, or both.

## Off-Duty Conductress Loses Appeal

INJURED while she was travelling in a bus, off-duty, to a darts match, a Ribblesdale conductress has failed in an attempt to secure damages from her employer. The Appeal Court has awarded her £1,400 damages against the bus driver for negligence. Lord Justice Hodson said there was no contract for conveyance between plaintiff and the defendant company and although the latter had agreed to provide transport for sporting events it took no obligation whatever upon itself in so doing.

## Co-ordinating Committee in India

TO secure maximum co-ordination between the various modes of transport, the Government of India has decided to set up a Road and Inland

Water Transport Advisory Committee. Its principal functions will be to examine problems relating to roads, road transport and inland water transport and to make recommendations to the Transport Development Council for final decisions. Mr. Raj Bahadur, Minister for Transport and Communications, is the chairman of the committee which comprises 15 official and 15 non-official members.

## Total Transport Agencies for U.S. Cities

FRESH thinking on the metropolitan area transport problem in the United States was put forward at the recent annual meeting of the American Transit Association in New Orleans. Mr. Walter J. McCarter, general manager of the Chicago Transit Authority, urged the establishment of an overall transport planning agency for each metropolitan area, to work with all other public agencies in planning co-ordinated total transport facilities and the expansion of the scope



experimental equipment has been in use in Philadelphia and Chicago; it takes the form of an atomiser which takes in air from a supercharger, passes it through a container of chemical, and blows vapour into the exhaust stream. The chemical, known as Dieselene, has an affinity for formaldehyde, the end product of diesel combustion, thus eliminating the unpleasant smell. Silencing is being accomplished by means of a wide acoustic cushion pan fixed beneath the vehicle to prevent sound waves from being "bounced back" off the road surface.

## Steel Hauling in Scotland

SPECIAL vehicles for haulage of steel sheet and plates were described at a hearing before the Scottish area Licensing Authority, when McKelvie and Co., Limited, Barrhead, sought authority to add four vehicles of 21 tons and four trailers of 24 tons to its A-licence. They were to be constructed as "rail jankers" to carry heavy fabricated plates, plate products and sheets to any part of the country. Objections were lodged by British Railways, British Road Services, Alex Scott (Contractors), Limited, Gavin Wilkie, Limited, and Robert Wynn and Sons (Manchester), Limited. The last-named withdrew on being assured that there was no intention of using the vehicles as low-loaders in the Manchester area.

It was stated that for the special needs of the Motherwell steel industry there had been devised some 15 years ago a type of vehicle known as a "rail janker." This consists of a platform vehicle linked to a trailer by a system of steel rails, with a forward turntable and with provision for extension of the rail system, which allows for the flexibility of steel plates in travel. The height of the rail system allows passage of a private car on the running side, under the elevated load. A recent ruling of the taxation authorities had indicated, it was said, that such vehicles must be regarded as articulated, reducing the payload from 20 to 12 tons. McKelvie had thus lost 48 tons carrying capacity and the present application was designed to bring this back to the previous level. The nature of the loads, the need for police authorisation, and the selection of routes, plus the delays at the steel-works and the lack of return loads all contributed to a situation where no extra business would be handled by the added number of vehicles. Decision was reserved.

## Bus and Coach Developments

No. 5 Regional Committee on Fares has recommended reductions in fares from London to a number of destinations on Sundays and bank holidays in summer. The points lie mostly north and north-west of London and are set out in the latest issue of *Notices and Proceedings* (No. 749) for the Metropolitan Traffic Area. The Traffic Commissioner will consider the proposals on November 3.

Most of the winter schedules for London Transport Country bus services took effect on October 15. The remainder, comprising all the Southern Division except Staines and Windsor garages which have already changed, take effect on October 29. Apart from routes indicated in MODERN TRANSPORT of August 2, services withdrawn include 344, 344A and 344B at Watford, these peak hour routes being covered mainly by the extension and diversion of 385, 385A and a new route 385, 351 which worked only on Saturday afternoons between Uxbridge and New Hatfield and 444 operating on Saturdays between Windsor and Manor Park. Additional journeys are provided on 408 between Slough and Manor Park. Service 305 has been withdrawn between Uxbridge and Gerrards Cross except on Saturdays. One-man operated RF buses are used on 331 (Hertford-Buntingford), 355 (Borehamwood-St. Albans), 359 (Amersham-Aylesbury), 459 (Uxbridge-Richings Park Estate) and 466 (Staines-Knowle Hill or Virginia Water) and have replaced GS-type and two-man RFs on 319 and 319P. There has been a considerable rearrangement of services in the St. Albans, Stevenage and Watford areas.

## Chicago Bus Fleet Half Propane

COMPLETION of delivery of a new order for 150 odourless propane-fuelled buses will bring the total of propane buses in the Chicago Transit Authority fleet to 1,448 out of a total of 3,175. The first of the new batch arrived recently, and delivery of the balance is taking place at the rate of one per day. These 50-passenger vehicles are being manufactured by the Flibco Company and the Twin Coach Company, at a total cost of \$3,336,000, or just under £8,000 per bus. In another sphere, successful tests are said to have been conducted in two American cities to deodorise and silence diesel buses. For nearly three months

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A recent 2-10-2 steam locomotive design on the Soviet railways

## SOVIET RAILWAY DEVELOPMENTS

### Electrification Progress

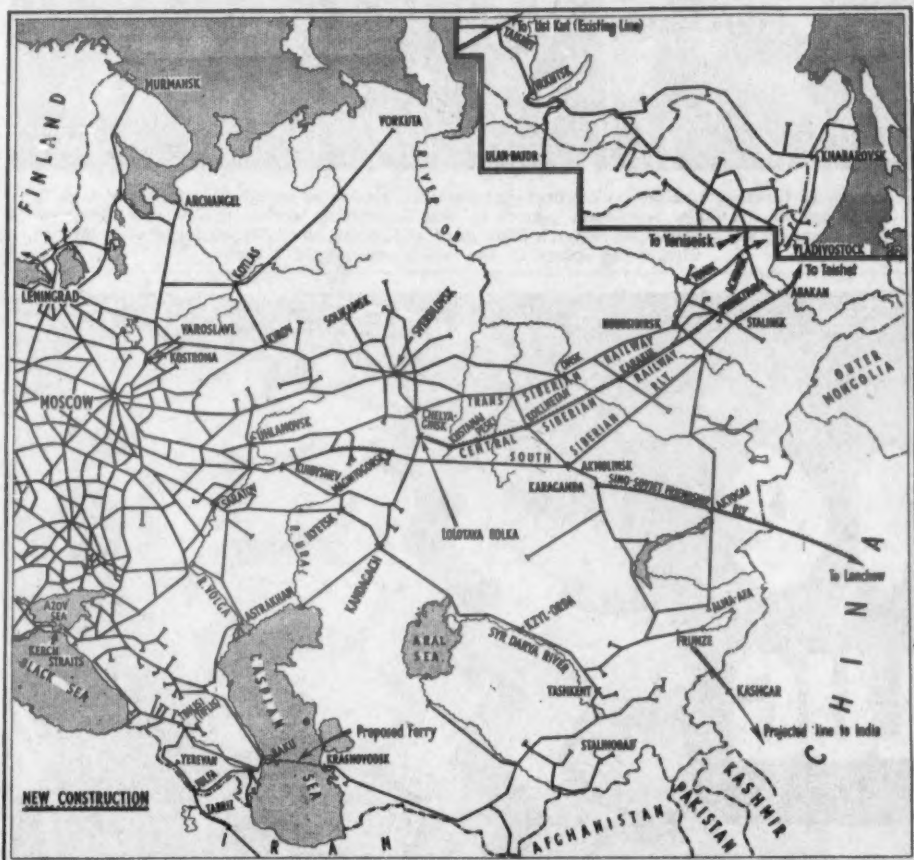
ALTHOUGH full details have not yet been published of the revised Soviet economic plans for the next seven years, sufficient has been said in recent months to give a broad outline of future railway developments. With the huge distances involved in traversing the Euro-Asian land mass that makes up the U.S.S.R., the railways are vital. In the last century the Trans-Siberian railway was to the Russian Empire what the Canadian Pacific was to the expanding dominion in North America. Today the Trans-Sib is no less important, remaining still the only major link between the rapidly developing Pacific coast and Russia proper.

In February an outline of the railway plan for 1959-65 was published by the Ministry of Railways. The main task is the completion of the last link of the South Siberian Railway from Abakan to

forward, this dam would also provide a causeway for a road and rail system connecting the U.S.S.R. and North America. This connection, it was said in Moscow when the plan was put forward, could give a direct non-stop rail link between Paris and New York. But that is looking decades ahead, even if the scheme gets beyond the paper stage.

#### Electric Traction

In the meantime, electrification of the existing trunk lines is being pushed ahead. By 1965 the 9,200 km. between Moscow and Vladivostok will be electrified, as well as that from Leningrad via Moscow to the Donbas and the Caucasus. The transport capacity of these electrified lines will more than have doubled, while steam locomotives then will be hauling only one-seventh of the total rail freight, which, it is estimated, will be at a level half



Map of the Soviet railways showing the latest construction programme to be outlined. It is proposed also to provide a tunnel under the Kerch Straits

Taishet. This is intended to take much of the strain off the Trans-Sib, by diverting traffic to and from the newer industrial areas of Kazakhstan and Soviet Central Asia, which previously had to be transhipped via various points on the older line. In June an appeal was put out for volunteers to go and work on the Abakan-Taishet section. Conditions would not be good at the beginning, the appeal warned, but improvements were promised.

#### Central Siberian Railway

Second in importance is the Central Siberian Railway, intended to carry Kuznetsk coal to the Urals, timber and iron ore from eastern Siberia to the Donbas and Kazakh industrial areas, and grain from the new virgin soil areas of Kazakhstan and south Siberia to the main consuming regions. When completed, this line will run for 2,000 km. roughly between the Trans-Sib and the South Siberian line, from a point below Chelyabinsk through Kustanai, Peski, Kokchetav, Karasuk and Kamennaya Obi, joining the branch of the Trans-Sib to Stalinsk at Proektynaya Junction. Some sections of this line will be in use by the end of the year and the entire route is scheduled for completion by 1960. The planning of the last section of the line is in progress and work is also going on on a connecting line from a new station at Irtyshskoye on the Central Siberian to Omsk on the Trans-Sib.

Various ideas for branch lines northwards from the eastern end of the Trans-Sib seem to be in abeyance, except for a line from Achinsk (westward of Krasnoyarsk) up to Yeniseisk, where one of the biggest sawmills in the country is being constructed. A line already exists from Taishet to Ust Kut, but its extension to the Pacific coast seems to have halted. A couple of years ago, a grandiose idea was put forward for the damming of the Bering Straits from the Siberian tip to Alaska. Together with a number of other benefits put

as high again as at present. The latest announced figures show the Soviet railways to generate 1,212,000 million ton-km. a year, an amount expected to increase by 52,000 ton-km. this year. The Deputy Minister of Railways claims this to represent 80 per cent of the freight business of the country; the railways as a whole contribute 10,000 million roubles to the State budget.

There is considerable scope for electrification, since of the existing 121,000 km. of line, only 9,400 km. will be electrified at the end of 1958. This total will rise to nearly 15,000 km. by 1960. In the Donets, 2,250 km.—representing 85 per cent of the total—is to be turned over to electric and diesel traction by 1965, while alternating current at high tension will be introduced for the first time in the Krasnoyarsk area. This will reduce the number of substations required. There are about 9,000 route-km. entirely diesel operated.

#### Kazakhstan

Of all the regions the busiest and most significant is probably Kazakhstan, with 10,000 km. of lines. The rate of railway building here, it is claimed, is unprecedented, with more than 500 miles of track laid in less than a year. Lines serve existing oil fields, bauxite mines and the virgin soil areas around Kustanai. A new line is being built to Rudny, where iron ore has been discovered. Long sections of the Akmolinsk-Karaganda line in this region have for years been blocked by snowdrifts in the winter. Now a 600-metre wide forest belt has been planted along the affected stretches for protection.

Of the international lines the most important will be that from Karaganda via Aktogai to Lanchow in China, which will considerably shorten the distance between the main Soviet industrial areas and the principal cities and ports in China.

(Continued on page 12)

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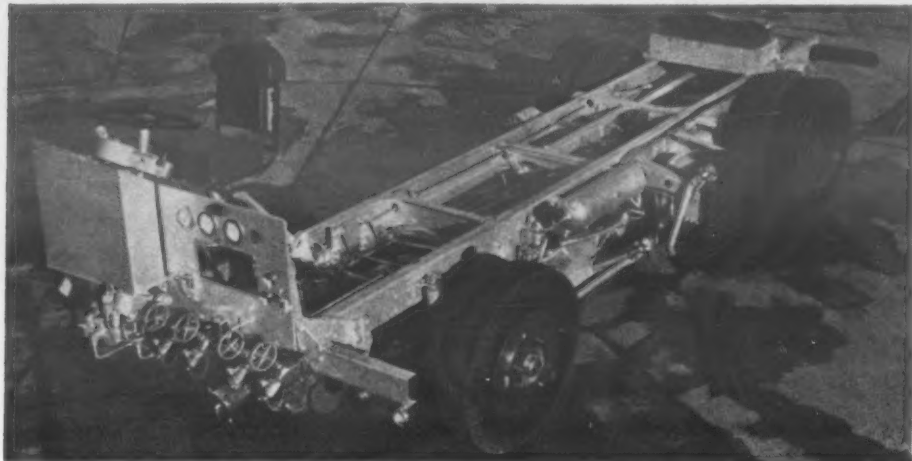
SIEMENS AND GENERAL ELECTRIC RAILWAY SIGNAL CO. LTD.  
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## LEYLAND FIRE ENGINE

### New Features in Firemaster Chassis

**F**IRE engines to be produced by Leyland Motors, Limited, will have a low centre of gravity for fast cornering with speeds up to 50 m.p.h., only two control pedals (a brake and an accelerator), a two-speed rear axle with electric gear selection, the radiator removed from the front to a side position near the rear wheels and all the pumping equipment and controls at the front of the vehicle and will be powered by a diesel engine.



The new Leyland Firemaster fire engine chassis for Manchester City Fire Brigade showing front couplings and controls and radiator at the side

Named Firemaster, the first vehicle of the type has been produced by Leyland for Manchester City Fire Brigade. It is the first fire engine built by Leyland Motors since prewar years, when the company was the largest fire engine manufacturer in the country. Firemaster fire engines will be marketed in collaboration with appliance manufacturers.

#### Fire Equipment at Front

In addition to good road holding and powerful braking, the Firemaster can pump up to 1,000 gal. of water a minute and has a first-aid pump which can deliver 75 gal. per min. at a pressure of 500 lb. per sq. in. Even when completely laden with all equipment and crew the Leyland fire engine will have fast acceleration. In preliminary tests, carrying weights to simulate a gross weight of 8 tons 14 cwt., the machine accelerated from rest to 45 m.p.h. in less than 30 sec. It also demonstrated excellent manoeuvrability by turning within a radius of 23 ft.

One of the main advantages of the new fire engine is that the pump intake and outlet nozzles are all situated at the front. This enables the fire engine to be driven straight up to a water supply and quickly coupled up. If a rear pump is required, a power take-off is taken from the front of the main

gearbox. The chassis has a wheelbase of 12 ft. 6 in. but can be supplied with a longer wheelbase to carry a turntable ladder. It is powered by a six-cylinder O600 diesel engine mounted at the centre of the chassis below frame level. This unit is generally similar to that fitted in the Leyland Worldmaster bus, except that it has a hydraulic all-speed governor and an inlet manifold with an intake at the rear through a paper-element air

cleaner. For road work, the engine develops 150 h.p. at 2,200 r.p.m. but for pumping purposes it is governed at 1,500 r.p.m. to provide a pump speed of 3,000 r.p.m.

An important characteristic of the engine cooling system, which is pressurised to 4 p.s.i., is that the closed-circuit system is still maintained during pumping operations and no external supplementary cooling water supply is required. Drive from the engine is taken through an 18-in. dia. fluid coupling to a Leyland Pneumo-cyclic four-speed semi-automatic gearbox which has an electro-pneumatic change-speed lever mounted on the steering column. A pulley on the drive between the fluid coupling and the gearbox drives a dynamo, mounted above the gearbox, and an eight-bladed radiator fan through a right-angle box. The radiator is mounted longitudinally alongside the frame just in front of the nearside rear wheels.

#### Two-Speed Axle

A short tubular propeller shaft carries the drive to a Leyland-designed axle incorporating an Eaton two-speed driving head equipped with an electric gearchange. At the front of the engine, a shaft taken from the crankshaft drives a power take-off with a two-to-one step-up ratio. The power take-off drives the main fire pump and a first-aid pump,



A special dispensation had to be obtained by Garrow-Fisher Tours (Kingston), Limited, before a heavy-duty luggage trailer could be taken from London to Dover on the maiden voyage of the operator's new Indianman coach to the East. Based on a Tasker chassis, the Harrington-bodied trailer unit is arranged to carry such items as steel recovery tracks, water tank, tools and spare parts in addition to passengers' luggage. The two-wheeled trailer is equipped with air brakes. The photograph shows the Indianman A.E.C. Mandator coach and trailer on its departure from London on October 17

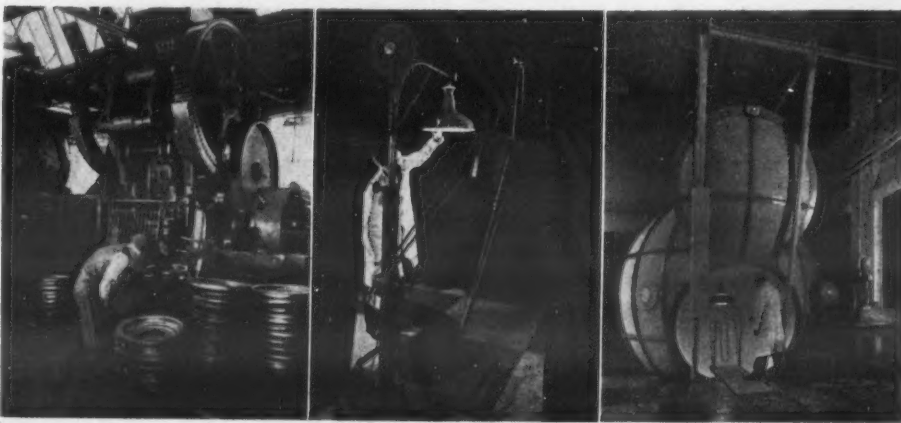
both mounted at the front of the chassis. An air-operated clutch transmits the drive to the gears by means of dog clutches. The operating cylinder for the clutch has interlocking mechanism so that the pumps cannot be run when the road wheels are driving.

#### Pump Control

In addition to the pump nozzles, there is also a control panel which can be used by a fireman standing at the front of the vehicle. Controls on the panel include those for the pump drive clutch, the main pump and first-aid pump, engine throttle

and main pump primer. There are also delivery gauges for each pump and a vacuum gauge for the pump intake.

Air pressure brakes, similar to those employed on the new Leyland Super Comet lorry operate through diaphragm air chambers on large-diameter drums giving a total effective braking area of 624 sq. in. Pressure on the pedal operates a Westinghouse D1 valve which releases air in an exact proportion to the pressure applied to the pedal. Severity of braking can therefore be judged precisely by the driver, the system enabling fast road speeds to be obtained with safety.



Benjamin Electric, Limited, is celebrating its golden jubilee as noted editorially on page 1. Left, one of the large brakeband presses in the Tottenham works; the polar co-ordinate photometer in the engineering research laboratory and, right, the 12-ft. diameter photometric integrating sphere in the laboratory weighs 2 tons

# The NEW Firestone SUPER MILEAGE LUG

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TRACTION of the Super Mileage Lug, this profit-draining problem is practically eliminated.

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**OUTPULLS AND OUTLASTS** any tyre of its kind.  
Specially designed for on-and-off-the-road service where a large part of the work is off-the-road and particularly severe.

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# BAD WEATHER LANDINGS

Automatic System Developed at R.A.E.

INTENSIVE RESEARCH IN MANY FIELDS

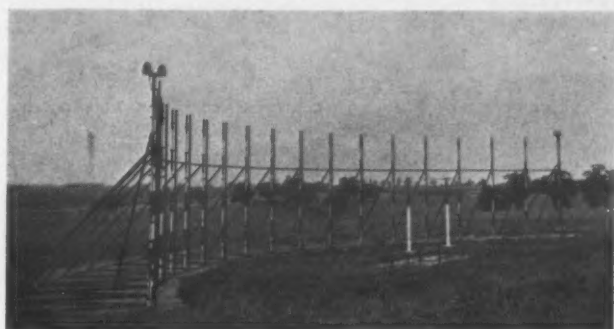
FOR 13 years the Blind Landing Experimental Unit of the Royal Aircraft Establishment has been peering away at the development of aids to enable aircraft to land at an intended destination regardless of the prevailing weather conditions. From 1945, when it was formed by combining at Martlesham Heath specialist technical groups from the R.A.E. at Farnborough and the Telecommunications Research Establishment at Malvern, until April, 1957, it operated from the wartime emergency landing strip at Woodbridge in

As already indicated, the radio altimeter is an STR 308 which has been specially modified by Standard Telephones and Cables from its STR 30 to a B.L.E.U. specification. It provides a very accurate measurement of height above ground but has also the ability to detect a change of height of not more than 2 ft. It is thus capable of producing a signal accurately proportional to rate of change of height. These attributes are used from a height of about 60 ft. to control pitch attitude to make the rate of descent proportional to height.

It follows that the lower the height the smaller is the rate of descent. This results in a very smooth flare-out and is used right through to actual touchdown.

At about 20 ft. the final switching action takes place to offset any drift due to a cross-wind, leader cable guidance is disconnected, the wings are levelled, and rudder is applied to change the aircraft heading to that of the runway. This heading has been set on the gyro-compass by the pilot at the start of the automatic landing. When the aircraft touches down, the pilot disconnects the automatic control by pressing a button on the control column. The aircraft is steered manually and brought

to a halt using information from the magnetic leader cable presented on the instrument panel. During all phases of the automatic landing monitoring signals are displayed on the normal flight instruments. These form part of Smith's Flight System. There is one additional instrument, namely a sequence indicator which displays the successive phases of the landing. The final component is the Smith's automatic speed control which controls the throttles automatically to maintain a constant preset speed during the approach until flare-out, when the throttles are closed to safe idling speed. The weight of additional equipment in a single-channel installation is about 100 lb.



The I.L.S. localiser aerial

Suffolk. When the main runway was completed at Bedford the unit was moved to the new R.A.E. and it was there last week that demonstrations were given to representatives of airlines, both British and foreign, manufacturers, international and national aviation bodies and the Services, of an automatic landing system, of blind landing research and of visual aids to approach and landing.

The value to air transport of a method of landing without difficulty instead of having, as is so often the case, to make for some alternate many miles from the original destination will be obvious and if the method developed by the B.L.E.U. or, for that matter, the one upon which the Bell Air-

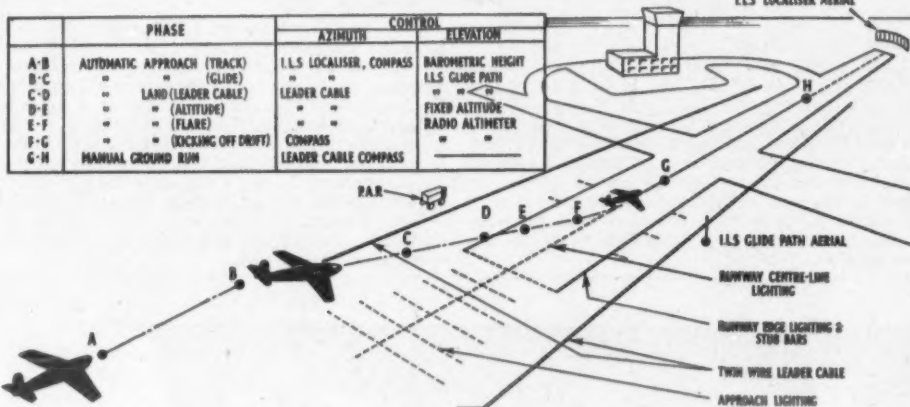


Diagram showing the principles of the automatic landing system

craft Corporation has been working in the United States, proves satisfactory for general adoption, there may also be a benefit in payload by reason of reduced fuel requirements due to the absence of need to provide for reaching alternates. The system demonstrated last week represents a very successful blend of the efforts of Government and private enterprise. The latter is represented by the Pye I.L.S. ground installation, by Murphy Radio magnetic leader cables, the Standard Telephones Airborne I.L.S. equipment and radio altimeter and by the Smith's Flight System and auto-pilot.

## Automatic Landing System

The automatic landing system has so far been used in full or in part for more than 2,000 landings with propeller and jet aircraft and in none of these has the aircraft been damaged. For the purpose of the exercise it is assumed that the aircraft has been guided down from circuit height to about 300 ft. by the Instrument Landing System. This provides two beam systems, one defining within certain limits the runway centre line and the other the glide path. The International Civil Aviation Organisation specification allows more tolerance between the azimuth guidance (localiser) and the runway centre line than is acceptable for automatic landing and so, although the Pye equipment is, in fact, more accurate than the specification requires, the azimuth guidance to the autopilot is switched automatically to a magnetic leader cable system at a height of about 300 ft.

This installation consists on the ground of two cables about 250 ft. on each side of the runway centre line and extending from about 5,000 ft. beyond the threshold in the undershoot area to as far along the runway as azimuth guidance is required during the ground roll. Each cable is fed from an alternator with a current at a different frequency, the current being kept constant by an electronic control circuit. The magnetic fields from these cables are detected in the aircraft by a small rotating loop, and their value is compared in a simple receiver. This allows position relative to the runway centre line to be determined to better than 5 ft. At a height of about 150 ft. the I.L.S. glide path signal may become unreliable on some installations and so, at that height, the signal is switched out automatically by the radio altimeter and the aircraft maintains the average attitude it has adopted during its approach from circuit height. This condition is maintained only for a brief period, for at a height of about 60 ft. the radio altimeter is used for the final flare-out.



The nose of a Vickers Varsity showing the only external fitting on the receiver to pick up the signals from the leader cables

ally close themselves and ceasing, with an effort, to gaze at them mesmerised, one finds the aircraft on the point of touching down on the centre line of the runway.

## Blind Landing Research

Research is in progress on other methods of making a blind landing. In one the object is to present to the pilot in bad visibility a picture similar to an aerodrome lighting pattern seen at night in good visibility. In order to penetrate the fog a radio frequency must be used and the concept is, therefore, that the runway should be outlined by a pattern of radio beacons whose position relative to the aircraft would be determined by an airborne receiver and displayed on a cathode-ray tube mounted in front of the pilot.

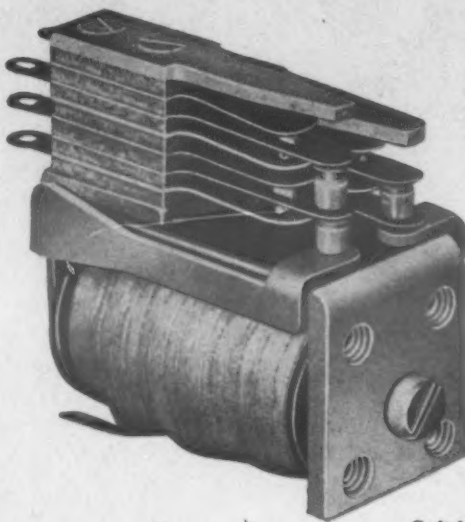
To explore the possibility of landing an aircraft

(Continued on page 12)

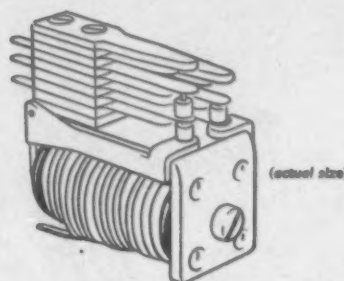
Thorn

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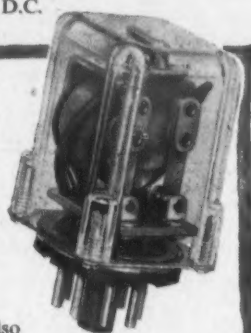


Switching current { Up to 3 amps. 110 Volts A.C.  
1 amp. 24 Volts D.C.  
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Release time: 3 milliseconds approx.  
Coil voltages: Up to 72 Volts D.C.

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Weight only 4 1/2 oz. ... projection only 2" above base.  
Robust construction.

Switching current: 5 amps maximum at 250 volts A.C.  
Maximum surge current: 10 amps.  
Operate time: 8 milliseconds approx.  
Release time: 6 milliseconds approx.  
Overall dimensions: 1 1/2" square by 2 9/32".  
Coil voltage: 240 volts standard; also available for 6, 12, 24, 48, 60, 110 volts either AC or DC.

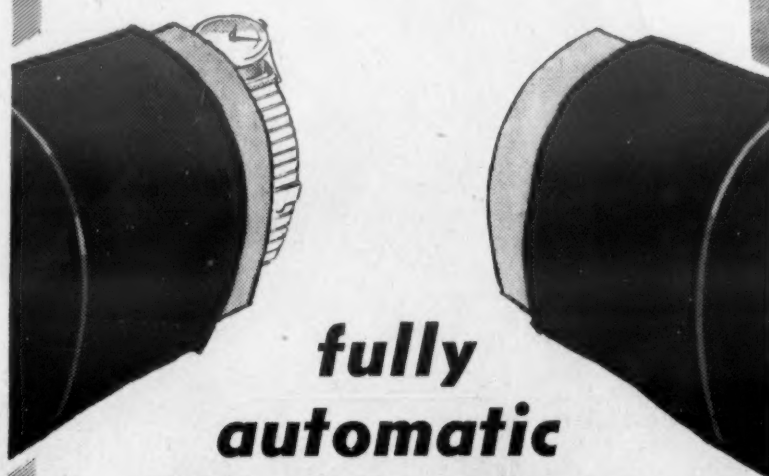


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blind landing

The S.T.C. High-Accuracy Frequency Modulated Radio Altimeter is an integral part of equipment used in the fully automatic blind landing of aircraft recently demonstrated at the Ministry of Supply's Blind Landing Experimental Unit at Bedford. S.T.C. Instrument Landing Receivers were also used to provide guidance information during the approach in both azimuth and elevation. S.T.C. have pioneered the development of a highly-accurate, low-level radio altimeter, essential in any automatic blind landing system. The latest equipment is the result of twenty years' research and development in this very specialised field and is probably the most accurate altimeter available in the world today.



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## NEWS FROM ALL QUARTERS

## German Federal Railway and the Atom

The German Federal Railway has announced that its central operating department in the Westphalian town of Minden has started basic experiments into the use of atomic energy for transport purposes.

## Electrification of Czech Railways

Under schemes now being elaborated, it is intended that half of all freight on Czechoslovak State Railways will be hauled by electric traction by 1962 and after 1970 the total will amount to 70 per cent, the remainder being dealt with by diesel traction.

## Dockland Bridge Dispute Settled

Narrow Street Bridge, Stepney, at the entrance to the Regent's Canal Dock, is to be rebuilt with a 20-ft. carriageway and 6-ft. footways. The British Transport Commission will contribute the equivalent of replacing the existing 15-ft. carriageway bridge, and London County Council will meet the whole of the additional cost of the improved bridge, subject to Ministry of Transport grant.

## East African Railways Tariff Changes

East African Railways announces that with effect from January 1, 1959, maximum rates for the carriage of high-rated goods will be reduced from 60 cents to 40 cents per ton per mile to meet road competition. Class 6-10 rates and special rates B, C and D (low-rated traffic) will be increased by 5 per cent and the wagon load rate for diesel and gas oil will be increased to compensate for the reductions.

## Rhodesia Railways Changeover

As a first stage in taking over the operation of the Bulawayo-Vryburg line Rhodesia Railways will assume full responsibility for operating the section of the line as far as Mahalapye as soon as possible. This first stage will provide employment for about 240 Europeans and for some non-Europeans. Rhodesia Railways provides locomotives and equipment for the whole of the line and this arrangement will not be altered.

## Stations Closing

Stations at Monument Lane, between Birmingham New Street and Wolverhampton, and Pleck, between Walsall and Wolverhampton on the London Midland Region, will be closed to passenger traffic on and from November 17. From November 3 Daisyfield Station, between Blackburn and Clitheroe, will be closed for all traffic and Lower Darwen Station, between Bolton and Blackburn, will be closed for passenger traffic.

## North West Rail Depots

Lord Rusholme, chairman of the London Midland Region Area Board, said in Manchester last week that a further six goods depots in the North Western area are to be modernised. They are at Liverpool Huskisson, Manchester Oldham Road, Oldham Clegg Street, Chester, Liverpool Wavertree and Manchester Liverpool Road. To speed up the work a light steel structure has been standardised. A scheme has also been prepared for one marshalling yard at Carlisle to replace the present nine.

## Boulogne-Lyon Car Sleeper Express

In 1959 the Boulogne-Lyon car-sleeper express of French Railways will run daily except Wednesdays and Whit Monday in each direction, from May to October.

## Deposit Payable on Car Ferry Bookings

Next summer a £1 deposit will be demanded of motorists booking in advance for a Saturday crossing in the British Railways Isle of Wight car ferries. During the holiday rush this year ferries had to sail with empty car spaces because reservations were not claimed.

## C.N.R. Redecides

Canadian National Railways has reversed its recent decision to eliminate one of its trains between Montreal-Toronto and Vancouver during the off season. C.N.R. announced last month it would discontinue operation of its Continental train and run only its Super Continental during the winter.

## Rail Ferry Busier than Ever

Traffic on the rail wagon ferry between Harwich and Zeebrugge has increased by 10,000 tons this year. Carrying exports in through wagon loads to Czechoslovakia, Poland, Italy and all parts of the Continent, ferries are now sailing four times a day—in some cases turning round in as little as two hours after the eight-hour crossing. Three modern ships operate the service.

## Brussels Plans a New Square

Plans for city reconstruction in Brussels include the creation near the North Station of a wide square 450 yd. long and 110 yd. wide whose proportions will resemble those of the Place de la République in Paris. This square will be surrounded by a covered gallery, with numerous shops. It will have a large ornamental garden and underground accommodation for about 1,000 cars.

## Railcars for Kings Cross Suburban Services

As part of the drive to speed up the improvement of the Kings Cross suburban service the Great Northern Line is planning to use a fleet of 20 Craven-built diesel twin railcars for selected services. It is hoped that the full fleet will be in operation during the first half of next year. These 20 units will not be sufficient to cover the whole of the suburban service, and the final pattern will be a combination of diesel locomotive-hauled trains and diesel railcars.

## Tyne Ferry Offer

The Tyne Improvement Commission has offered to make over its passenger and vehicular ferry service between South Shields and North Shields, without charge, to South Shields and Tynemouth Corporations. The ferry operates at a considerable annual loss and previous efforts to transfer it to Tynemouth and South Shields Corporations have failed. Meanwhile, the Commission intends taking steps to improve the financial position by increasing the toll on certain traffic by 6d. per vehicle; increasing passenger fares from 3d. to 4d.; and discontinuing the overnight service which is very poorly patronised.

models, the use of paper-stemmed air cleaners, and changes in the standard cab. The disc brakes fitted to the 54G dumper are Girling type 46 units. The discs are 15½ in. in diameter and the friction pads are 7 in. thick, there being two sets of pads per disc. So far it has been possible to actuate this type of brake only mechanically (except for pneumatic hand brakes), and because a disc brake has no self-servo effect, some form of servo has to be applied to the hydraulic circuit. Consequently, an air-hydraulic system has been used for the front brakes, whilst the rear brakes are straight air-pressure cast-operated units.

**E.R.F. FIRST WITH DISC BRAKES**

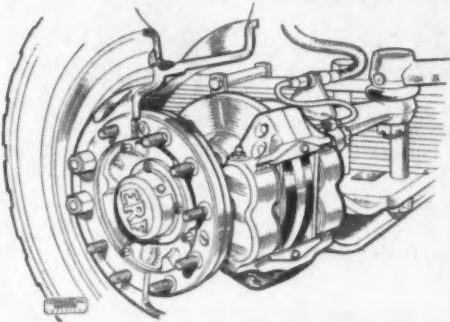
(Right) Air-braked eight-wheelers have Girling motor-operated front brakes actuated by a new compact air cylinder. This replaces the normal footman cylinder and occupies little more room.

The heart of the braking system is the compact servo and air valve, which is mounted on the front of the cab and linked to a conventional brake pedal in the cab. On the front axle, which carries the front brakes, the servo operates the front brakes and at the same time the servo and operates the rear brakes. The two circuits are "split" for safety, so that in the event of a complete failure of the compressed-air supply, the brake pedal will operate the front brakes only.

The front brakes through the master cylinder, which is particularly robust chassis frame fabricated from thick steel pressings is used in the 54G dumper. Underneath springs to reduce the body floor axle has a propeller and spiral gears, all this is connected to a central pot, and the overall effect is a very efficient and reliable system.

*Ferodo Pads of course*

Reproduced by courtesy of 'Commercial Motor'



The new E.R.F. 54G dumper is the first standard commercial vehicle in Britain to be fitted with disc brakes. The brake is Girling: the brake pads are Ferodo, of course. Racing cars, production cars, public service vehicles and now commercial vehicles—every application of disc brakes has seen Ferodo Brake Pads specified. Manufacturers know that Ferodo Disc Brake Pads inherit all the outstanding qualities that have made Ferodo Anti-Fade Brake Linings first choice for so many years. Follow the manufacturers' lead. For drum and disc brakes alike, specify Ferodo.

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Air pressure servo hydraulic brakes.

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10-stud wheels with 10.00-20" 14 ply tyres, twins rear including spare wheel and tyre.

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## COMMERCIAL AVIATION

### B.E.A. and Cheap Fares

#### AIR CONGESTION

**A**CTIVE steps which British European Airways is taking towards reducing the cost of air travel have been outlined by Lord Douglas of Kirtleside, the chairman, in his latest message to the staff. "Our winter schedules will be introduced on November 1 and many improvements to our services will be made from that date. The first and most important of these are the already-announced drastic weekend fare reductions on the domestic trunk routes, which represent another step along the road which we have followed ever since B.E.A. was formed after the war. They continue a trend which has reduced our average fare-level (in real money values) by more than a third in 10 years. The new fares are at a rate of about 2½d. per mile on the routes between London and Belfast, Glasgow, Edinburgh and Manchester. This is a very low price to pay for travel in the most modern turbine-powered aircraft which carry you in the greatest comfort at over 300 m.p.h. Furthermore, it is just half the 5½d. per mile of the much publicised transatlantic economy class fare."

Amongst the steps it was taking in preparation for future fare reductions was the conversion of the fleet of V701 Viscounts to a high-density layout which would accommodate 60 passengers. The conversion of the first of these aircraft, G-AMOK *Sir Humphrey Gilbert*, was completed recently. The conversion involved a complete rearrangement of the interior and included the installation of built-in airstairs. The *Vanguards* and *Comets*, which were due to be delivered to B.E.A. in 1960, were to have mixed-class layouts which would provide the major part of their passenger accommodation in high-density configuration. While preparing for a great expansion and cheapening of air travel B.E.A. was also conscious of the requirement of a growing section of the air travelling public for first-class accommodation and service. Lord Douglas writes: "One of the encouraging aspects of the year's passenger traffic has been the results on our new mixed-class services which were started last May. In recent months first-class traffic on mixed-class flights has been well up to expectations and in September we achieved a load factor of about 70 per cent on the first-class accommodation on the international services. First-class traffic between London and Paris was, in fact, no less than 70 per cent higher this August than in August, 1957."

#### B.E.A. Cuts Cyprus Fares

A British European Airways application to charge a new London-Cyprus return fare of £85—saving £23—has been approved. The new fare is for twice-weekly night flights by Viscount air liners starting on November 1.

#### Britannia from Christmas Island

Recently Air Charter completed the second of four Britannia charter flights between Great Britain and Christmas Island in the Pacific Ocean. On board the aircraft which touched down at Stanstead Airport on October 12 were 15 crew members and 112 service men. The aircraft completed the 10,000-mile journey in 28 hr. flying time, stopping at Honolulu, Vancouver and Montreal. Before it had the Britannia, this operation used to take Air Charter 10 days for the round trip. It can now complete the journey in half the time and is able to carry twice the number of passengers.

#### July Activity at British Airports

Air transport movements at United Kingdom aerodromes in July, 1958, numbered 46,360, an increase of nearly 4 per cent compared with July, 1957. The number of passengers handled in the same period increased by 2 per cent to 1,020,829. Freight traffic amounted to 23,347 short tons, an increase of 29.5 per cent over July, 1957, and Post Office mail set down and picked up amounted to 1,553 short tons. At London Airport there were 13,048 air transport movements, a decrease of 3 per cent compared with July last year, and 432,747 passengers were handled, a decrease of 1 per cent. Comparisons of traffic at London Airport are affected by the transfer of some services to Gatwick, which had 2,151 air transport movements during the month and handled 43,351 passengers. Airports in the London area as a whole showed an increase of 5 per cent in air transport movements and 4 per cent in passengers. Airports at which passenger traffic increased considerably over July, 1957, were Southend (Rochford) by 44 per cent to 34,428, Manchester (Ringway) by 13 per cent to 79,663, and Ferryfield by 10 per cent to 45,060. Other substantial increases in passenger traffic were at Newcastle (Woolsington) by 36 per cent to 9,719, Lympne by 14 per cent to 7,374, Yeading by 14 per cent to 6,609, and Bournemouth (Hurn) by 11 per cent to 2,743. Many aerodromes had a fall in passenger traffic compared with last year, the most marked being at Ronaldsway, Isle of Man, by 22 per cent to 43,902.

#### Air Congestion Discussions

Congestion of air traffic and the special needs and characteristics of jet aircraft are the basic problems which face the International Civil Aviation Organisation Rules of the Air, Air Traffic Services and Search and Rescue Division which opened a four-week session at I.C.A.O. headquarters in Montreal on October 21. Because of the increasing speed of modern aircraft, the possibility of avoiding air collisions by the principle of "see and be seen" is diminishing. One suggested answer is the stratification of the air space, so that above a certain altitude all flights (particularly those of the fast-flying jets) will be carried out under control of ground stations. Aircraft flying under ground control are now spaced out both vertically and horizontally to avoid collisions; if aircraft can be allowed to fly closer together by the use of advanced types of navigational aids such as radar, the air space will be given more capacity to handle aircraft and congestion will be reduced. In general this new equipment, in addition to providing greater accuracy about the position of the aircraft, must be based on faster transmission of information to the air traffic controller so that he can make the best allocation of the available air space. This may also involve freeing air traffic controllers from routine duties, to give them more time for making decisions. In the field of search and rescue, the division will consider a number of points designed to improve search and rescue procedures. Efforts will also be made to increase co-operation with surface vessels for these purposes, and in this regard the meeting will take into account the recent formation of the intergovernmental Maritime Consultative Organisation, a United Nations specialised agency whose first assembly will be held early next year.

## I.R.F. HOLDS CONGRESS IN MEXICO CITY



*Christopher T. Brunner*

### Mr. CHRISTOPHER T. BRUNNER, M.Inst.T.

Leader of the delegation composed of representatives from the British Commonwealth, Africa, the Middle and Far East to the Third World Meeting of the International Road Federation which opens tomorrow in Mexico City under the auspices of the Mexican Government is Mr. Christopher T. Brunner, a director of Shell-Mex and B.P. Limited. Recently elected a vice-chairman of the Federation, Mr. Brunner is a past-president of the Institute of Transport and holder of the Institute's Road Transport Medal. Educated at Nottingham High School and Manchester University, he served on the former Metropolitan Railway until, in 1926, he joined Shell-Mex, Limited. In the following year he formed the company's statistical (subsequently trade relations) department and continued as its manager after the formation of Shell-Mex and B.P., Limited, in 1932. During the war, as secretary of the management committee of the Petroleum Board and manager of the Board's secretariat, he was closely concerned with the distribution of oil fuel throughout the country. From January, 1947, until the end of June, 1948, when the Board was dissolved, he was its acting secretary. Appointed an assistant general manager of Shell-Mex and B.P., Limited, in 1947, he became a director in 1950. At one time a frequent contributor to MODERN TRANSPORT, he is a leading international authority on the economics of roads and road transport, and author of several books and numerous technical papers on road transport. In 1951 he delivered to the Institute of Transport the Spurrier Memorial Lecture, which was generally regarded as remarkable for its succinct and graphic description of the pattern of the oil industry. A vice-chairman of the British Road Federation, he has taken a leading part in the work of that body and has been a foremost protagonist in the campaign for better roads. He is a member of the Grand Council of the Federation of British Industries and chairman of the Road Panel of the Federation's Transport Users Policy Committee. He is also chairman of the Road Research Board's Committee on Economics, and was a member of the Committee of Inquiry into Coal Distribution Costs, whose report was reviewed in the July 12 issue of MODERN TRANSPORT. It is fitting that upon one so experienced in road development and its problems should fall the honour of speaking to the address of welcome which will be delivered to the Congress by the President of the Mexican Republic.

## I.R.F. WORLD MEETING

### In Mexico City

#### TIMELY INVESTIGATION

**P**LANs for the third world meeting of the International Road Federation, which opens in the Palace of Fine Arts in Mexico City on October 26, were described in London this week by Sir Reginald Biddle, chairman of the London Section of the I.R.F. Working sessions will deal with economic and social aspects of roads and road transport, modern methods of road financing, and technical training. There will be a tour of El Olivar Operators and Mechanics Training Centre, where road-building machinery men have been trained in large numbers by the Mexican road authorities, and there will be a highway seminar presided over by the Hon. Eduardo Dibos, Minister of Communications and Public Works, Peru. Speakers at this closing session will include: M. A. Rumpel, Director of Roads, France, and president of the Permanent International Association of Road Congresses; Mr. Bertram D. Tallamy, U.S. Federal Highway Administrator; Mr. S. O. Eklund, deputy director, South African Road Federation; Dr. J. Kolbuszewski, University of Birmingham, U.K.; the Hon. J. T. Douglas, Minister, Saskatchewan Department of Highways and Transportation; and Mr. H. Stiven, chairman, Nigerian Road Federation.

#### One Hundred Million Vehicles

Sir Reginald Biddle, describing the plans for the meeting, at which the British delegation will be led by Mr. C. T. Brunner, said there were now more than 100 million motor vehicles in the world, the vast majority of them owned and operated by individuals, trade or industry. It was in the interests of all that the enormous amount of capital that these vehicles represented should pay maximum dividends, but whereas their ownership was largely in private hands, the highways which they used to serve communities and individuals were controlled by governments.

Governments and people everywhere were gradually becoming more road minded, but in every country highway development lagged behind traffic. There was, therefore, a need continuously to re-state the economic case for accelerated road development. Whereas it was possible closely to assess the economic advantages of a hydro-electric scheme or a harbour development project, a great deal remained to be done to assess the relative economic advantages of a particular highway construction or improvement scheme. One of the tasks in Mexico, therefore, would be to compare notes upon experience and reach conclusions as how best the economic case for further capital expenditure on road development could be put to governments in a convincing and effective way.

#### Financing Roads

Hitherto, even when the economic advantages of new and improved roads were conceded by governments, finance to carry out the work was not always forthcoming. In some countries this problem could be solved by a reshuffle of priorities. Under-developed countries, however, had to seek other means of financing capital projects. In that respect the Mexico City meeting was timely. A few weeks ago in Montreal the Chancellor of the Exchequer laid down a four-point U.K. plan for larger and cheaper development assistance to be given to Commonwealth and Colonial territories. Then, at the World Bank meeting in Delhi earlier in the month President Eisenhower's proposal that a new International Development Association be established, was taken a stage further; it was to be anticipated that some firm arrangements in this matter would be emerging within the next few months.

Very substantial new development capital should, therefore, become available from both those sources. The International Road Federation and its affiliated national associations would be able to consider how best they could demonstrate that the building of new roads and the improvement of existing routes, because of the material and economic advantages that such projects brought to all countries, must have an adequate proportion of whatever funds may be available.

#### Building Roads

Given the acceptance of the economic case for better roads and the money for them, there remained the task of building the new highways. There was a universal shortage of trained engineers, particularly in under-developed countries. One of the main reasons why the third world meeting was being held in Mexico City was that there, at the El Olivar centre, one of the world's most ambitious projects for training engineers and operators of modern road-building machinery had been under way for some years. That centre had provided the men who had helped build the many thousands of miles of farm-to-market roads which had so benefited Mexican economy in the postwar period. Technicians from El Olivar were also helping in the construction of new roads in the other Central American countries.

There was one final aspect of the third world meeting that was a challenge to us. It was often repeated that success in exporting was based upon a sound home industry. The road construction industry in this country had for years been virtually static but now the position was changed. Contractors were carrying out important projects such as the London-Birmingham motorway, the Ross Spur and the building of the Forth Road Bridge. Contracts on this scale called for the most modern techniques; there was a market for large quantities of the most up-to-date types of road-building machinery which could be tested under working conditions and constantly improved. The most modern road materials were being used and our universities were now running courses in highway and traffic engineering. The International Road Federation, Shell Petroleum Co., Limited, the Dunlop Rubber Co., Limited, and Aveling Barford, Limited, were already providing bursaries for overseas engineers to study at these universities. We should shortly have in Britain something to show and from which the overseas engineer could learn. We had knowledge, experience and materials to sell abroad to help other countries to develop their roads and thereby to develop their economies.

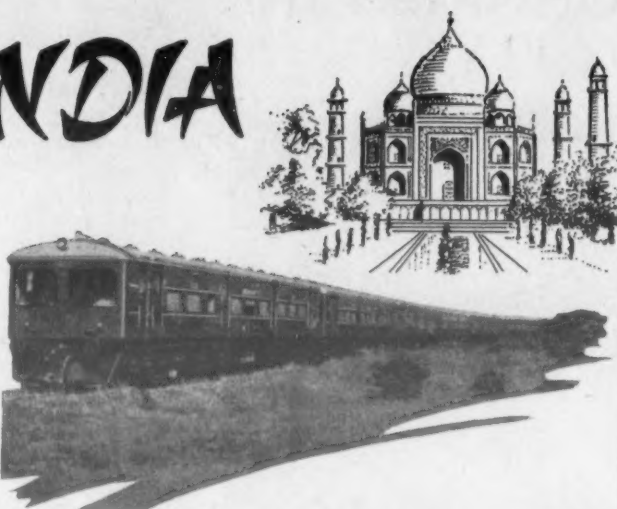
The moment was surely ripe for an increased drive by private enterprise throughout the world for an acceleration of road construction. The third world meeting would provide the springboard for that drive.

The 1959 drawing and handicraft competitions arranged by the Institute of British Carriage and Automobile Manufacturers include one for a general arrangement drawing of a one-man single-deck service bus to operate from ring car parks to a city centre. Another is for a 12-seat bus.



# IN INDIA

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## MOVING BULK CONSIGNMENTS

### Progress with Tote System

SOME 18 months have passed since the first demonstration was given in Britain of the Tote system of bulk materials handling in regular use. Based on the movement of portable bins, the system which is manufactured under licence in this country by Pressoturn, Limited, has been adopted on a considerable scale by manufacturers of a wide variety of products involving either distribution in bulk or the intake of raw materials

due for introduction on December 1 for the movement in A74 bins of specialised pigments between Grimsby and Slough. The number to be employed is 24.

The Tote bin, constructed in heavy gauge, high strength aluminium alloy, is designed for easy handling by hand- or power-operated stillage or pallet truck, overhead crane, or fork-lift truck. The bin is made in four standard sizes:—A42,



The suitability of the Tote system for rail transport and its economical use of space is shown in these views of an open wagon and a Dennis Pax lorry

in that form. The suitability of the standard bins for movement by rail, other than those of 110 cu. ft. capacity, has led to their use for various traffics and last week a convention was held at Stratford upon Avon to enable traffic officers from the various regions of British Railways to study more closely the possibilities available.

For some nine months a pilot scheme has been operating on the Western Region with 50 Tote bins of 95 cu. ft. capacity (type A95) carrying carbon black between Avonmouth and Fort Dunlop. Its success led to the placing of an order by the region and this in turn has lately been increased to one for 200 bins. The London Midland Region, using 20 A74 bins, is carrying high-grade pitch from Manchester to Newcastle upon Tyne and it is also installing 32 A95 bins for china clay traffic between Cornwall and Manchester. Another pilot scheme is

42 cu. ft. capacity; A74, 74 cu. ft. capacity; A95, 95 cu. ft. capacity; and A110, 110 cu. ft. capacity. For each size of bin the standard filling aperture is 9 in. diameter, and the discharge door 34 in. by 14½ in. Specially designed gaskets and fasteners are incorporated in both to ensure dust and weathertight sealing. It may be noted that owing to loading gauges the A110 is not suitable for railway applications.

The Tote spinner head unit and the Tote jolter are designed to ensure full capacity loading where required of fine powders during filling operations. The Tote tilt discharger tilts the loaded bin to the required angle for discharging into any production or processing equipment.

Advantages claimed for the system are based on the fact that by moving materials in bulk unit loads labour and handling costs are reduced to the minimum. Bins can be filled by standard equipment as at present used for filling sacks, barrels or boxes and the compact storage made possible by the use of the bins will save 25 per cent of the space usually required for bulk materials storage without the necessity of employing double-stacking. Where ceiling or roof heights permit bins can be double-stacked if required.

Products subject to contamination, deterioration or damage from outside elements are protected in the airtight bins. Specially designed gaskets and fasteners exclude ingress of impurities and contamination, prevent loss of material from the bin, and retain the original moisture content of the material, while the use of aluminium in the manufacture of Tote bins makes them ideal for handling many corrosive materials. Transport of the bins only requires their loading on any flat-bed vehicle available; several different qualities or blends can be delivered by the same vehicle.

Movement of the bins from supplier to user can be by rail or road vehicle. Fork-lift or pallet trucks are normal methods of movement in the plant or between the plant and the vehicle or railway dock, while bins fitted with corner lifting lugs can be handled by standard lifting tackle. Transfer of filled bins from stores to road vehicles, and from road vehicles to receiving depots can be accomplished in a fraction of the time needed to move equal quantities of bagged materials.

United Dominions Trust, Limited, announces the opening of a new branch office at 7 Albert Street, Slough. (Telephone Slough 22483-5.)

The replacement sales division of the India Tyre and Rubber Co., Limited, has now moved from 92 John Bright Street, Birmingham, to the company's head office at Inchinnan, Renfrew. Mr. H. B. Mackenzie becomes general sales manager, replacement division.

As each company's diesel engines are complementary and jointly represent a power range of 20 h.p. upwards, the English Electric Co., Limited, and W. H. Dorman, Limited, have entered into an agreement whereby each will promote the sale of the other's products.

The name of the Aerograph Co., Limited, has been changed to the Aerograph-DeVilbiss Co., Limited, in order to tie up more closely with the symbol "Aerograph-DeVilbiss" which has long been famous as denoting spray painting equipment of notable efficiency.



At the closing of the International Railway Congress session in Madrid—left to right: Messrs. Pérez Pozuelo, general secretary of the Executive Committee of the Local Commission; Lorenzo Ochando, General Director of Railways and Tramways in the Ministry of Public Works; de Vos (not visible), president of the International Railway Congress Association; Vigón, Minister of Public Works; General Franco declaring closed the XVII Railway Congress; Solís, Secretary Minister; and Piana (half head visible), president of the Local Commission and chairman of RENFE

# POWER

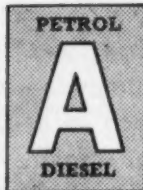
POWER DIESEL

If you want  
power  
—ask for it!



The Power Petroleum Co. Ltd.

AGENCY PUMPS IN ALL AREAS





## ROAD VEHICLE INDUSTRY

### I.C.I. Aids B.M.C. Engine Reconditioning

THE old Riley works in Coventry is rapidly undergoing a transformation that will result in quicker and more effective reconditioning of B.M.C. engines. As part of a process of rationalisation being carried out by the British Motor Corporation, all engine reconditioning is to be concentrated in one place. Engines reach the factory direct from service agents all over the country. After a few basic dismantling operations, the engines are immersed in I.C.I. Ardrex cleaner, which removes the worst accumulations of dirt and grease from exposed parts. Subsequent treatment in a spray-washer completes the rough cleaning. A dominating feature of the dismantling section is the large group of I.C.I. trichloroethylene degreasing plants, which are used for degreasing cylinder heads and blocks. The complete installation consists of three groups of plants, each containing two boiling liquor plants with separate interconnected distillation units. One plant in each group is used for degreasing cylinder blocks and the other for cleaning cylinder heads. Each of the main plants is supplied with a continuous stream of clean distilled solvent from its

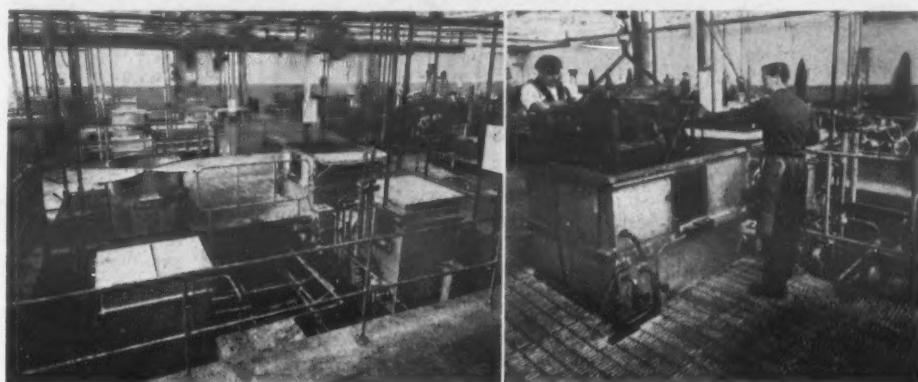
a cylinder and piston over the top of the trailing-axle spring, which bears against the piston; thus, increase of load on the driving axle causes the trailing axle to bear a higher proportion of the total weight. In the unladen condition, the small coil spring provides very soft trailing-axle suspension and ensures that almost all the rear-end weight is borne by the driving axle.

#### N.B. Thylene Down in Price

REDUCED prices for Thylene antifreeze compound are announced by National Benzole Co., Limited, for the coming winter. In 1-gal., 5-gal. and 40-gal. containers the price is now 52s. a gal. Half-gallon tins cost 27s. 6d., quart bottles 13s. 9d. and the price per pint loose is 6s. 6d.

#### Dunlop Earthmover Tyre

ADDED to the range of Dunlop earthmover tyres is a new Power Grip tubeless tyre in the new size of 24.00-29. It has a nylon casing, a tough rubber tread, and is readily avail-



A general view of I.C.I. degreasing plants installed by B.M.C. at the old Riley works, Coventry, and, right, a batch of cylinder blocks being lowered into a degreasing plant

interconnected distillation unit, to which dirty liquor from the main plant is diverted for recovery. By this system degreasing is always carried out in a clean solvent and there is the further advantage that the main plant need not be shut down for cleaning since all the grease and dirt residues accumulate in the still—a small plant that can be cleaned out much more easily and conveniently than the main unit.

#### Borg-Warner Pocket Guide

MANY of the questions asked about the type of automatic transmission developed for larger cars, which is suitable also for the larger sizes of delivery van and light lorries, are answered in a new booklet *A Pocket Guide to the Borg-Warner Fully Automatic Transmission*, published by Borg-Warner, Limited, Letchworth, Herts.

#### New Marchal Catalogue

DETAILS of a number of items of vehicle lighting equipment shown to the public for the first time at the recent Commercial Motor Show by Marchal Distributors, Limited, are given in a new catalogue just published by the company. The new items include the Uni-Visorisms—a matched pair of semi-flush-fitting fog and driving lamps and economy versions of the Popular fog and long-range lamps. Particularly interesting in the catalogue are photographs of the light patterns of various types of lamp.

#### New Rear Axle for Tiger Cub

WITH the exception of vehicles fitted with the semi-automatic Pneumo-Cyclic gearbox, the underfloor-engined range of Tiger Cub bus and coach chassis manufactured by Leyland

able in 24 and 36 ply-rated constructions at £583 os. 6d. and £720 10s. 6d. respectively. It is expected that conventional inner tubes will shortly be available for this tyre.

#### Bedford Radio

RADIOS for Bedford lorries with 12-volt electrical systems is announced by Vauxhall Motors, Limited, the first commercial vehicle manufacturer to market its own sets. The complete unit costs £18 18s. However, it can be bought in two parts; the basic unit, without speaker, and the presentation parts which include tuning dial, escutcheon, chromed knobs, etc., costs £11 plus £4 11s. 1d. purchase tax, while the radio supplementary kit comprising speaker assembly, suppression and all presentation parts costs £2 7s. 4d. plus 10s. 7d. purchase tax. The Bedford radio can be installed in any Bedford with a 12-volt electrical system; it is the same unit as the one installed in Vauxhall cars, with minor modification for use in a cab. The receiver covers the medium wave band, and has a preset long wave station. A new three-piece telescopic aerial designed to fit on the crown of the right-hand front wing costs £1 19s. 6d.

#### Simms-Eberspächer Turbocharger

FOR all its complete acceptance and widespread use in other applications, the exhaust-driven supercharger for automotive diesel engines has received little support from British users and, with a few exceptions, no interest has been shown in this method of improving specific power by British vehicle and engine manufacturers. In the past, it was true to say that, however successful on engines for fairly constant-speed operation, there was no British-made turbocharger capable



Front and side views of the 45-seat Currus Cityrama double-deck sight-seeing coach on Citroën P55 chassis, which, as we reported in our October 11 issue, made a surprise appearance at the Paris Motor Show. The narrow upper deck with two-and-one seating for 19 is reached by an open straight stepladder just inside the rear door and there is an eight-language address system with individual language selector switch and headphones

Motors, Limited, can now be fitted with an improved heavy-duty Leyland two-speed axle incorporating specially designed Leyland hubs, brake drums and axle beam and an Eaton driving head. A two-speed axle was fitted to the Tiger Cub when the range was first marketed, but was later discontinued. The new heavy-duty two-speed axle has been introduced to meet the needs of many operators who require a wide selection of gear ratios.

#### Improved Third Axle Available

AN improved version of the third axle conversion developed by Primrose 3rd Axle Co., Limited, Clitheroe, Lancs, incorporating hydraulic load compensation, is now available for fitting to many popular makes of 7-ton chassis. It was also seen fitted to the new Guy Warrior light-weight eight-wheeler at the recent Commercial Motor Show. The Primrose third axle is fitted without alteration of the original equipment and with it a normal 7-ton payload is increased to 10 tons. The conversion provides rear bogie suspension through the addition of a third axle supported by a trailing arm and coil spring. A telescopic hydraulic unit across the driving-axle spring on each side is hydraulically connected to

of achieving acceptable results when applied to automotive engines. But such is certainly not the case now, when several machines designed and developed specifically for road vehicle engines are in production in this country. One of these, the Simms-Eberspächer turbocharger, is described in a comprehensive brochure just published by Simms Motor Units, Limited, Finchley, London, N.2, which is recommended to road transport operators and engineers.

#### Leyland Group Overseas Representation

TWO new depots have been opened by Leyland Albion (Africa), Limited, at Pietermaritzburg, Natal and at Eshowe, Zululand, to provide spares and servicing facilities for Leyland, Albion and Scammell vehicles in these areas. In Peru, Milne and Co. S.A., Lima, already agent for Leyland Motors, Limited, has been appointed agent for the products of Albion Motors, Limited, and Scammell Lorries, Limited. Henry Waugh and Co., Limited, 226 Nares Road, Bangkok, has been appointed agent for Leyland vehicles and industrial engines in Thailand, while in India, Ashok Leyland, Limited, Ennore, Madras, has been appointed agent for Scammell Lorries, Limited, for the Republic of India.

# TWO LAKH (200,000 to you) MILES UNFINISHED.. *and still going strong*



Mr. S. Gurdial Singh is on the right. The 'Comet' bus is modestly in the background.

Leyland 'Comet' buses are usually earmarked for overseas, and a reminder of the stalwart work they do comes from the Patiala Bus Service (Private) Ltd., who write:—

"This 'Comet' bus has been handled by S. Gurdial Singh through out and he has created a record of covering two lakh miles, and its engine has not been cleaned so far."

So far, so good... but according to Leyland calculations, it's good for another lakh or two yet before any attention is needed. The letter goes on:—

"This S. Gurdial Singh is a Driver with the District fame. He has been re-reading (sic) meritorious services for the transport and has specially selected the Leyland for creating a good record which he has done definitely."

He couldn't have chosen better! The letter ends on a gratifying note:—

"His maintenance and driving has created a charm and affection for Leyland among the transport operators in Punjab."

*Thank you, Mr. S. Gurdial Singh*  
**Leyland** NEVER STOPS BREAKING ECONOMY RECORDS

LEYLAND MOTORS LTD. Home Sales Office: 1 LYGON PLACE, LONDON, S.W.1. Tel: SE 0896 617  
Export Division: HANOVER HOUSE, HANOVER SQUARE, LONDON, W.1. Tel: MAY 012 2561

**For trucks of 5-6 ton pay-load**  
Lockhead 16-inch brakes are expressly designed for this range of truck, with 16" x 2 1/2" two-leading shoe front brakes and 16" x 3 1/2" rear brakes.  
A similar set of 14" brakes is also made for lighter trucks.  
The highly successful Hydrovac, in both single and double forms, offers the simplest and most easily installed servo for the petrol engine vehicle.

**Lockheed**

Regd. Trade Mark  
LOCKHEAD  
HYDROVAC

**THE DOUBLE HYDROVAC**

**AUTOMOTIVE PRODUCTS COMPANY LIMITED**  
LEAMINGTON SPA • WARWICKSHIRE • ENGLAND



## Operators have been waiting for this!



## THE NEW KARRIER-WALKER 12 SEATER BUS

PRODUCED specifically for the use of country operators, contractors, airways, hotels and for marginal service operation where larger vehicles would show a loss, the 'KARRIER-WALKER' bus—economical, reliable and marketed at an attractive price—is an outstanding vehicle complying in all respects with Ministry of Transport regulations.

### ITS FEATURES INCLUDE

- Choice of fully-proved chrome bore petrol, or light diesel engine • Comfortable seating • Roomy and durable all-steel body • Ample headroom • Generous luggage space • Front entrance through sliding door • Spare wheel carried below frame at rear.

COVERED BY NATION-WIDE SERVICING FACILITIES

**BUILT STRONGER TO LAST LONGER!**

CONNER CARS LIMITED LUTON BEDS. EXPORT DIVISION: ROOTES LTD. DEVONSHIRE HOUSE PICCADILLY LONDON W.1



## **NOW** a **SILVER CITY ROADAIR** service between **LONDON and LILLE**

Frequent scheduled services give a transit time of less than four days between Silver City's London Freight Depot and collection/delivery in Lille, Roubaix or Tourcoing. The economical ROADAIR rates include collection/delivery in the three French towns and all loading and unloading charges at Lydd and Le Touquet Airports.

Ask your Forwarding Agent for further information about this new ROADAIR service and also about Silver City's established London-Paris ROADAIR route.



**SILVER CITY AIRWAYS LIMITED**

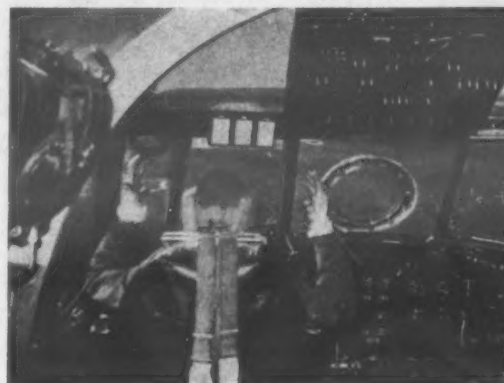
## Bad Weather Landings

(Continued from page 7)

from guidance obtained from a two-dimensional picture of the runway, closed loop television circuits have been installed in a Devon and a Meteor aircraft. The television camera is mounted in the nose of the aircraft and the cathode-ray tube monitor in front of the second pilot. Many night landings have been made using television pictures of a runway lighting pattern and the essential requirements of the picture, such as field of view and static resolution, have been defined. Work is

approach but, in common with all other approach patterns, is very limited in the glide path information it provides.

Following an analysis of accident statistics attention has been concentrated recently upon improving the glide path guidance. Two angle of approach indicators, based on very different principles, are under evaluation at B.L.E.U. Other assessments to be made shortly include centre line runway lighting for improved heading information during



The Varsity goes in to land automatically while the pilot shows his lack of concern; right, the control switches in the cockpit



now in progress to design a system to present a similar picture to the pilot in zero visibility.

Although the greater proportion of the work of the B.L.E.U. is directed towards developing blind landing systems the more immediate problem of assisting the pilot in the manual landing of his aircraft following an instrument approach is not neglected. A number of instrument approach aids already exists which is capable of bringing an aircraft down to a height of about 200 ft., after which the landing must be completed visually. The problems facing the pilot in transferring from instrument information to visual information at a low height and with only a few seconds left before the landing are still serious and not likely to be eased by the introduction into service of more modern aircraft.

Much of the basic research work on approach lighting patterns is carried out by Calvert and his team in the electrical department, R.A.E., although ideas arise from various other sources as well. The main contribution of B.L.E.U. in this field is to make recorded assessments of the different aids both in flight and using an approach and landing simulator. By analysing the records and pilots' comments a scientific comparison is made. The Calvert (centre line and cross bar) approach lighting pattern is recognised internationally as providing excellent roll and azimuth guidance during

touchdown and ground run, and an experimental pattern of lights on the runway in the touchdown area ('landing mat') to give continued roll guidance to touchdown and define the ground plane.

B.L.E.U. is in the process of installing, at the R.A.E., Bedford, a comprehensive selection of

Nominal height in ft.	Phase	Guidance	
		Azimuth	Elevation
Circuit to 300	Glide	I.L.S. localiser	I.L.S. glide path
300 to 150	Leader cable	Leader cable	I.L.S. glide path
150 to 60	Attitude	Leader cable	Constant attitude
60 to 20	Flare	Leader cable	Radio altimeter
20 to 0	Kick-off drift	Compass	Radio altimeter
0	Ground run	Leader cable, compass	—

### The phases of guidance during the automatic approach and landing

modern lighting aids which will be available for demonstration purposes as well as experimental work. The approach and landing simulator, mentioned earlier, will enable a detailed study to be made of the problems involved in the approach and landing of different types of aircraft, using different lighting patterns in restricted visibility. It will assist particularly in the evaluation of the difficulties likely to be introduced by the higher approach speeds of future aircraft.

## Soviet Railway Developments

(Continued from page 5)

In June traffic began across the Soviet-Iranian frontier along the newly completed line between Julfa and Tabriz. A direct Tehran-Moscow service is reported to be operating and a through coach goes on to Berlin, so at last it is possible to go from Western Europe to Iran by train. Plans are in the air for a direct line from Frunze, in Soviet Central Asia, to Delhi, which would link India via the Turkestan-Siberian Railway with various Soviet centres. It has been proposed that this line should tunnel under the Himalayas. Another scheme has been proposed to tunnel under the Caspian Sea, to shorten the route between the Caucasus and Kazakhstan by 1,500 km.

A third tunnelling scheme recently suggested is under the Kerch Straits between the Azov and Black Seas—this would replace the existing train ferry service. While the Caspian tunnel is only on paper, work has started at Baku on a Caspian train ferry. This will be on the Baku-Krasnovodsk service from 1960. The 600 km. return trip between the two ports will take the ferry 32 hours, instead of the four days occupied by ordinary dry cargo ships. Sixty luxury coaches will be carried and there will be accommodation for 300 passengers.

### Welded Rails

On the Belorussian and South Ukrainian lines rails are being flash butt welded automatically into 800-metre lengths. The power for the welding unit is supplied by a 200-kW generator. A prototype diesel power station produced earlier this year at the Kulbyshev diesel locomotive factory in Kolomna is also expected to be employed on this work, as for other railway construction jobs, where power is not available from the mains. It is a 1,050 kW a.c. generator and five are ordered. Trials have been completed of a 100-ton capacity

wagon at the Lower Tagil transport machine building works. All metal, it has a light-alloy steel body fitted with end doors for rapid unloading of bulk freight. It runs on two three-axle bogies, the automatic brake and an automatic coupler are provided. It is calculated that 3,000-4,000 ton trains could be run, using these wagons at 120 k.p.h. Automatic buffing and coupling gear are now standard on Soviet locomotives and rolling stock. All carriages and wagons delivered since last January have been without side buffers, while the buffers are being removed from existing older stock.

### New Recording Equipment

News of three new recording instruments has been given in recent weeks. One reveals defects in wagon wheels by an electro-magnetic device, which records the defect, while another instrument records the serial number of the pairs of wheels. These data are simultaneously transmitted to the inspection staff. This system is to be tried out on the Donets group of lines.

In Leningrad an electronic automatic axle counter for registering the passage of rolling stock has been successfully tested. It works on the principle of an interrupted beam. At Tashkent a new instrument for the automatic registration of train movements has been produced, which can be used both on lines equipped with automatic block signals and those under the control of a dispatcher.

Of the locomotive developments, the most interesting is the first Soviet gas-turbine-electric locomotive now building at Kalomna; it is rated at 6,000 h.p. It is in two sections. It will have a maximum speed of about 62 m.p.h. and will be used for goods work on steep gradients. It will go into operation next year and will be followed on the test bench by an 8,000-h.p. unit.

### B.T.C. TRAFFIC RECEIPTS: PERIOD NO. 10—1958

	Four weeks to October 5, 1958			Aggregate for 40 weeks		
	1958 (£ thousands)	1957	+ or -	1958 (£ thousands)	1957	+ or -
<b>PASSENGERS</b>						
British Railways ...	10,495	9,884	+ 611	110,102	111,704	- 1,602
London Transport						
Railways ...	1,796	1,739	+ 57	18,685	17,715	+ 970
Road services ...	4,350	4,541	- 191	35,979	45,831	- 9,852
Provincial and Scottish Buses ...	4,866	4,473	+ 393	47,027	45,074	+ 2,033
Ships ...	628	629	- 1	6,149	6,129	+ 20
<b>Total Passengers</b>	<b>22,135</b>	<b>21,266</b>	<b>+ 869</b>	<b>218,022</b>	<b>226,453</b>	<b>- 8,431</b>
<b>FREIGHT, PARCELS AND MAELS</b>						
British Railways						
Merchandise and livestock ...	6,986	8,254	- 1,268	70,600	82,605	- 12,005
Minerals ...	3,102	4,239	- 1,137	34,436	40,610	- 6,174
Coal and coke ...	8,614	9,651	- 1,037	93,747	95,696	- 1,949
Parcels, etc., by passenger train ...	4,137	4,182	- 45	39,699	38,919	+ 780
Collection and delivery, etc. ...	930	1,046	- 116	9,484	10,306	- 822
<b>Total Freight British Railways</b>	<b>23,769</b>	<b>27,372</b>	<b>- 3,603</b>	<b>247,966</b>	<b>268,136</b>	<b>- 20,170</b>
Others ...	4,427	4,505	- 78	41,790	42,420	- 630
<b>Total Freight, Parcels and Maels</b>	<b>28,196</b>	<b>31,877</b>	<b>- 3,681</b>	<b>289,756</b>	<b>310,556</b>	<b>- 20,800</b>
<b>Aggregate</b>	<b>50,331</b>	<b>53,143</b>	<b>- 2,812</b>	<b>507,778</b>	<b>537,009</b>	<b>- 29,231</b>

Comparisons are affected by increases in rates which have been authorised from time to time, by the provincial and Scottish bus strike from July 20 to 28, 1957, by the London Transport road services strike from May 5 to June 28, 1958, and by the restrictions in oil supplies which operated from November 7, 1956, to May 14, 1957.



# SEA LINKS WITH THE CONTINENT

15—Facilities Through Harwich\*

SERVICES WITH A LONG HISTORY

THERE are many records of early Continental visits to this country but amongst the earliest is that of the visit of Danish vessels to Orwell Haven in 885. It was here, at a place which the mariners called the West Rocks shoal, that Harwich became the only harbour between Yarmouth Roads and the Thames mouth capable of affording shelter to vessels against eastern gales, and the best port for vessels to and from North Europe.

It was England's commercial contacts with Holland, and the desire of Englishmen to learn what the Dutch could teach, which led to the demand for better communications across the North Sea; the result was the institution of a regular packet service. In 1661, by agreement between the Postmaster-General and the City of Amsterdam, a regular service of packet boats was begun for the carriage of "ye common mayle" between Harwich and Hellevoetsluis, carrying also passengers and freight and thus founding our present services. The ships were wooden hogs of 40-60 tons with a crew of six.

The voyage in these early days was not without its excitement; the early packets were heavily armed against attack by pirates and one of the attractions to the captains and crews was the possibility of chasing prizes. The time came, however, when a change of policy became necessary and after 1694 the packets were not armed and captains were ordered to pursue only their legitimate business. Sometimes the weather caused delays, but this was not the only difficulty; captains and crews, deprived of the privilege of prize money, were quick to seek other perquisites. The numerous inlets on the east coast made it a paradise for smugglers, and packet boats were apt to disappear mysteriously for days at a time, even when the wind was in the most favourable quarter.

During the French occupation of Holland in the Napoleonic wars, the service was necessarily suspended. It opened again in 1801 when there were nine packets running from Harwich, each of 70-100 tons, maintaining services to Hellevoetsluis and Cuxhaven. In the early 1830s, however, traffic at Harwich began to decrease. Since 1826, Harwich had been feeling the competition of the

tively and 27 ft. in the beam, being driven by two cylinder oscillating engines.

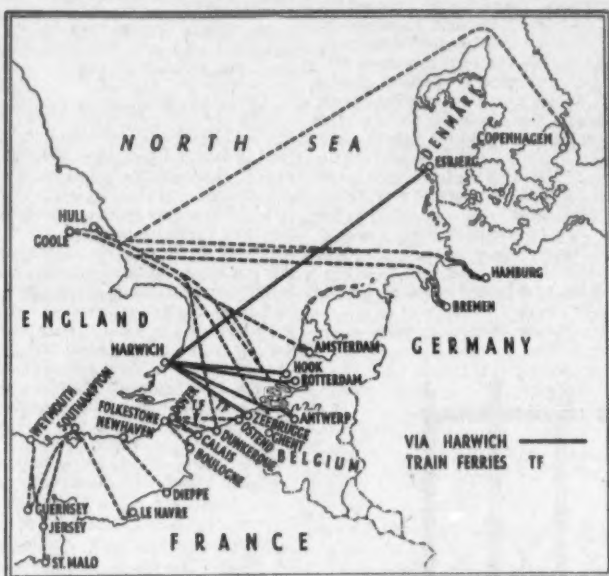
## Consolidation of Facilities

The second decade saw the consolidation and further expansion of the position of the Harwich services, in which connection further progress was made by the opening of the New Waterway from the sea to Rotterdam in 1872 and the Great Eastern Railway's newest addition the *Richard Young* was the first steamship to pass up the waterway to Rotterdam. This was an important development: vessels could now get up to Rotterdam independent of tides, and fixed schedules were introduced. In 1875 the Rotterdam service was made a daily one, presumably with the introduction of what was to be for many years the crack ship of the fleet, the p.s. *Claud Hamilton*. She was the largest vessel which had up to that time been put on the service, having two funnels and masts. She had an imposing appearance, was of practically 1,000 tons gross and was driven by 2,000 h.p. compound oscillating engines. She was 265 ft. long and was 30 ft. in beam.

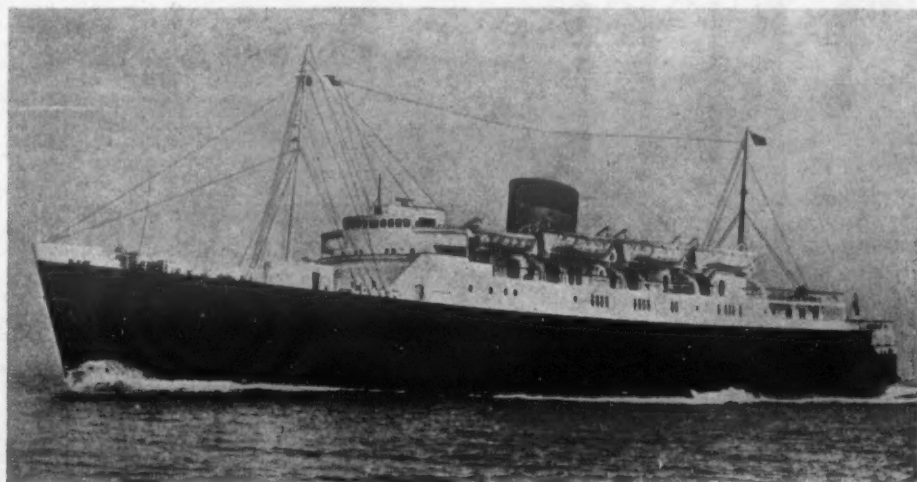
As the years went by improvements were made and new ships added—the Antwerp service became thrice weekly and by 1882 every weekday. Opening of the next decade brought the innovation of boat trains with six-wheel rolling stock. Liverpool Street Station, London, was opened and in 1882—a major event—Parkston Quay, about 2,000 ft. long, and built on piles, was opened as the Harwich services had for some time past been too cramped at Harwich itself. Cargo services increased with passenger traffic and there were three sailings each week to Rotterdam from September, 1887.

## The Hook Reached

The next milestone was the opening of the Hook of Holland in 1893 which point the Holland Railway had reached. From then until 1904 the Rotterdam steamers called there but in the latter year the Hook of Holland became the terminal port for the passenger service, which it has remained ever since. The Rotterdam service was then made a cargo service only. This led to an appreciable reduction in overall journey times and



Sea routes from British ports to the Continent indicating the extensive coverage provided through Harwich



s.s. "Amsterdam," built in 1950, is one of the three vessels which maintain the Harwich-Hook of Holland service

Dover-Calais service where steamers of much greater tonnage were operating and in 1831 the Post Office packet services were put out to tender, with the result that this service was transferred to the Thames and, for the time being, it was the end of Harwich as a packet station.

## Endeavours to Restore Services

In June, 1846, on the occasion of the opening of the Eastern Union Railway, an attempt was made to reopen the service to Rotterdam but this was not successful. Further ventures in 1854, 1855 and 1857 failed likewise. In 1863, however, the Scheldt, closed for over 200 years, was reopened, and Antwerp and its economic hinterland rapidly gained in importance.

In fact, the Great Eastern Railway opened its steamship services in October, 1863, by starting a once weekly service to Rotterdam. For this purpose it chartered three vessels *The Blenheim*, the *Norfolk* and the *Prince of Wales*. Before the year was out the contract for carriage of Her Majesty's mails had been secured and this traffic came back to Harwich. Within 12 months a similar once-weekly service to Antwerp had been introduced. The Rotterdam service was also doubled in 1864.

The company soon turned to building its own vessels. The first to be delivered were the *Zealous* and *Avalon* built in 1864, and *Pacific* in 1865 on the Thames, the former by J. and W. Dudgeon of Poplar, later the well-known Thames Iron Works Company. The *Zealous* was built as a passenger vessel and the *Avalon* to carry both passengers and cargo. They were 230 ft. and 240 ft. long respec-

tively to a great increase in passenger traffic. One record gives the number of passengers as under:

1866	..	9,350
1874	..	35,390
1893	..	95,000
1897	..	130,000

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(To be continued)

## REGULAR CARGO SERVICES

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Coastwise to HULL

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extended from 3 months to 2½ years

This is typical of the extra service being obtained from our CY Alloy Brake Blocks—which although remarkably resistant to wear, have no adverse effect on loco tyres. This is one of our most popular applications. After exhaustive tests many of the best known manufacturers of locomotives fit CY brake blocks as standard.

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# The first

main line diesel-hydraulic locomotives in service on British Railways.



Photo. by courtesy of British Railways, Western Region.

The first of five built by North British Locomotive Co. Ltd., in Glasgow, is in service on the Western Region. These 2,000 h.p. 117 ton type "4" locomotives are fitted with

**WESTINGHOUSE**

## BRAKES

The brakes are of the vacuum controlled straight air type, in which the driver's vacuum brake valve controls the train brakes, and, through a proportional valve, the air brakes on the locomotive. Independent control of the air brakes on the locomotive is provided by a driver's straight air brake valve.

The brakes were designed and made in England by:  
**Westinghouse Brake and Signal Co. Ltd., 82 York Way, London, N.1**

Associated in India with  
Saxby & Farmer (India) Private Ltd., Calcutta  
Associated in South Africa with Westinghouse Brake & Signal Co. S.A. (Pty.) Ltd., Johannesburg  
Associated in Australia with  
Westinghouse Brake (Australia) Pty. Ltd., Concord West, N.S.W.  
Agents—Bellamy & Lambie, Johannesburg



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Ask your Forwarding Agent for further information about this new ROADAIR service and also about Silver City's established London-Paris ROADAIR route.



**SILVER CITY AIRWAYS LIMITED**

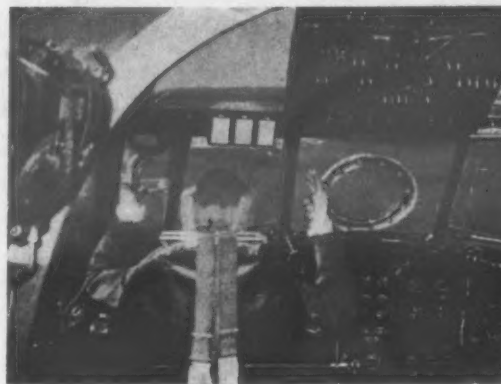
## Bad Weather Landings

(Continued from page 7)

from guidance obtained from a two-dimensional picture of the runway, closed loop television circuits have been installed in a Devon and a Meteor aircraft. The television camera is mounted in the nose of the aircraft and the cathode-ray tube monitor in front of the second pilot. Many night landings have been made using television pictures of a runway lighting pattern and the essential requirements of the picture, such as field of view and static resolution, have been defined. Work is

approach but, in common with all other approach patterns, is very limited in the glide path information it provides.

Following an analysis of accident statistics attention has been concentrated recently upon improving the glide path guidance. Two angle of approach indicators, based on very different principles, are under evaluation at B.L.E.U. Other assessments to be made shortly include centre line runway lighting for improved heading information during



The Varsity goes in to land automatically while the pilot shows his lack of concern; right, the control switches in the cockpit



now in progress to design a system to present a similar picture to the pilot in zero visibility.

Although the greater proportion of the work of the B.L.E.U. is directed towards developing blind landing systems the more immediate problem of assisting the pilot in the manual landing of his aircraft following an instrument approach is not neglected. A number of instrument approach aids already exists which is capable of bringing an aircraft down to a height of about 200 ft., after which the landing must be completed visually. The problems facing the pilot in transferring from instrument information to visual information at a low height and with only a few seconds left before the landing are still serious and not likely to be eased by the introduction into service of more modern aircraft.

Much of the basic research work on approach lighting patterns is carried out by Calvert and his team in the electrical department, R.A.E., although ideas arise from various other sources as well. The main contribution of B.L.E.U. in this field is to make recorded assessments of the different aids both in flight and using an approach and landing simulator. By analysing the records and pilots' comments a scientific comparison is made. The Calvert (centre line and cross bar) approach lighting pattern is recognised internationally as providing excellent roll and azimuth guidance during

touchdown and ground run, and an experimental pattern of lights on the runway in the touchdown area ('landing mat') to give continued roll guidance to touchdown and define the ground plane.

B.L.E.U. is in the process of installing, at the R.A.E., Bedford, a comprehensive selection of

Nominal height in ft.	Phase	Guidance	
		Azimuth	Elevation
Circuit to 300	Glide	I.L.S. localiser	I.L.S. glide path
300 to 150	Leader cable	Leader cable	I.L.S. glide path
150 to 60	Attitude	Leader cable	Constant attitude
60 to 20	Flare	Leader cable	Radio altimeter
20 to 0	Kick-off drift	Compass	Radio altimeter
0	Ground run	Leader cable, compass	—

The phases of guidance during the automatic approach and landing

modern lighting aids which will be available for demonstration purposes as well as experimental work. The approach and landing simulator, mentioned earlier, will enable a detailed study to be made of the problems involved in the approach and landing of different types of aircraft, using different lighting patterns in restricted visibility. It will assist particularly in the evaluation of the difficulties likely to be introduced by the higher approach speeds of future aircraft.

## Soviet Railway Developments

(Continued from page 5)

In June traffic began across the Soviet-Iranian frontier along the newly completed line between Julfa and Tabriz. A direct Tehran-Moscow service is reported to be operating and a through coach goes on to Berlin, so at last it is possible to go from Western Europe to Iran by train. Plans are in the air for a direct line from Frunze, in Soviet Central Asia, to Delhi, which would link India via the Turkestan-Siberian Railway with various Soviet centres. It has been proposed that this line should tunnel under the Himalayas. Another scheme has been proposed to tunnel under the Caspian Sea, to shorten the route between the Caucasus and Kazakhstan by 1,500 km.

A third tunnelling scheme recently suggested is under the Kerch Straits between the Azov and Black Seas—this would replace the existing train ferry service. While the Caspian tunnel is only on paper, work has started at Baku on a Caspian train ferry. This will be on the Baku-Krasnovodsk service from 1960. The 600 km. return trip between the two ports will take the ferry 32 hours, instead of the four days occupied by ordinary dry cargo ships. Sixty luxury coaches will be carried and there will be accommodation for 300 passengers.

### Welded Rails

On the Belorussian and South Ukrainian lines rails are being flash butt welded automatically into 800-metre lengths. The power for the welding unit is supplied by a 200-kW generator. A prototype diesel power station produced earlier this year at the Kuibyshev diesel locomotive factory in Kolonna is also expected to be employed on this work, as for other railway construction jobs, where power is not available from the mains. It is a 1,050 kW a.c. generator and five are ordered. Trials have been completed of a 100-ton capacity

wagon at the Lower Tagil transport machine building works. All metal, it has a light-alloy steel body fitted with end doors for rapid unloading of bulk freight. It runs on two three-axle bogies, the automatic brake and an automatic coupler are provided. It is calculated that 3,000-4,000 ton trains could be run, using these wagons at 120 k.p.h. Automatic buffing and coupling gear are now standard on Soviet locomotives and rolling stock. All carriages and wagons delivered since last January have been without side buffers, while the buffers are being removed from existing older stock.

### New Recording Equipment

News of three new recording instruments has been given in recent weeks. One reveals defects in wagon wheels by an electro-magnetic device, which records the defect, while another instrument records the serial number of the pairs of wheels. These data are simultaneously transmitted to the inspection staff. This system is to be tried out on the Donets group of lines.

In Leningrad an electronic automatic axle counter for registering the passage of rolling stock has been successfully tested. It works on the principle of an interrupted beam. At Tashkent a new instrument for the automatic registration of train movements has been produced, which can be used both on lines equipped with automatic block signals and those under the control of a dispatcher.

Of the locomotive developments, the most interesting is the first Soviet gas-turbine-electric locomotive now building at Kalomna; it is rated at 6,000 h.p. It is in two sections. It will have a maximum speed of about 62 m.p.h. and will be used for goods work on steep gradients. It will go into operation next year and will be followed on the test bench by an 8,000-h.p. unit.

### B.T.C. TRAFFIC RECEIPTS: PERIOD NO. 10—1958

	Four weeks to October 5, 1958			Aggregate for 40 weeks		
	1958 (£ thousands)	1957	+ or -	1958 (£ thousands)	1957	+ or -
<b>PASSENGERS</b>						
British Railways ...	10,495	9,884	+ 611	110,102	111,704	- 1,602
London Transport ...	1,796	1,739	+ 57	18,685	17,715	+ 970
Railways ...	4,350	4,541	- 191	35,979	45,831	- 9,852
Road services ...	4,866	4,473	+ 393	47,107	45,074	+ 2,033
Provincial and Scottish Buses ...	628	629	- 1	6,149	6,129	+ 20
Ships ...						
<b>Total Passengers</b>	<b>22,135</b>	<b>21,266</b>	<b>+ 869</b>	<b>218,022</b>	<b>226,453</b>	<b>- 8,431</b>
<b>FREIGHT, PARCELS AND MAELS</b>						
British Railways ...	6,986	8,254	- 1,268	70,600	82,605	- 12,005
Merchandise and livestock ...	3,102	4,239	- 1,137	34,436	40,610	- 6,174
Minerals ...	8,614	9,651	- 1,037	93,747	95,696	- 1,949
Coal and coke ...	4,137	4,182	- 45	39,699	38,919	+ 780
Parcels, etc., by passenger train ...	930	1,046	- 116	9,484	10,306	- 822
Collection and delivery, etc. ...						
<b>Total Freight British Railways</b>	<b>23,769</b>	<b>27,372</b>	<b>- 3,603</b>	<b>247,966</b>	<b>268,136</b>	<b>- 20,170</b>
Others ...	4,427	4,505	- 78	41,790	42,420	- 630
<b>Total Freight, Parcels and Maels</b>	<b>28,196</b>	<b>31,877</b>	<b>- 3,681</b>	<b>289,756</b>	<b>310,556</b>	<b>- 20,800</b>
<b>Aggregate</b>	<b>50,331</b>	<b>53,143</b>	<b>- 2,812</b>	<b>507,778</b>	<b>537,009</b>	<b>- 29,231</b>

Comparisons are affected by increases in rates which have been authorised from time to time, by the provincial and Scottish bus strikes from July 20 to 28, 1957, by the London Transport road services strike from May 5 to June 28, 1958, and by the restrictions in oil supplies which operated from November 7, 1956, to May 14, 1957.



# SEA LINKS WITH THE CONTINENT

15—Facilities Through Harwich\*

## SERVICES WITH A LONG HISTORY

THERE are many records of early Continental visits to this country but amongst the earliest is that of the visit of Danish vessels to Orwell Haven in 885. It was here, at a place which the mariners called the West Rocks shoal, that Harwich became the only harbour between Yarmouth Roads and the Thames mouth capable of affording shelter to vessels against eastern gales, and the best port for vessels to and from North Europe.

It was England's commercial contacts with Holland, and the desire of Englishmen to learn what the Dutch could teach, which led to the demand for better communications across the North Sea; the result was the institution of a regular packet service. In 1661, by agreement between the Postmaster-General and the City of Amsterdam, a regular service of packet boats was begun for the carriage of "ye common mayle" between Harwich and Hellevoetsluis, carrying also passengers and freight and thus founding our present services. The ships were wooden hoys of 40-60 tons with a crew of six.

The voyage in these early days was not without its excitement; the early packets were heavily armed against attack by pirates and one of the attractions to the captains and crews was the possibility of chasing prizes. The time came, however, when a change of policy became necessary and after 1694 the packets were not armed and captains were ordered to pursue only their legitimate business. Sometimes the weather caused delays, but this was not the only difficulty; captains and crews, deprived of the privilege of prize money, were quick to seek other perquisites. The numerous inlets on the east coast made it a paradise for smugglers, and packet boats were apt to disappear mysteriously for days at a time, even when the wind was in the most favourable quarter.

During the French occupation of Holland in the Napoleonic wars, the service was necessarily suspended. It opened again in 1801 when there were nine packets running from Harwich, each of 70-100 tons, maintaining services to Hellevoetsluis and Cuxhaven. In the early 1830s, however, traffic at Harwich began to decrease. Since 1826, Harwich had been feeling the competition of the

tively and 27 ft. in the beam, being driven by two cylinder oscillating engines.

### Consolidation of Facilities

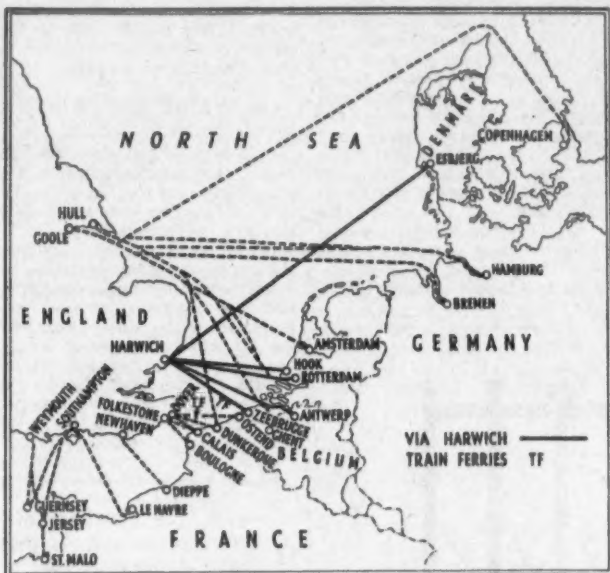
The second decade saw the consolidation and further expansion of the position of the Harwich services, in which connection further progress was made by the opening of the New Waterway from the sea to Rotterdam in 1872 and the Great Eastern Railway's newest addition the *Richard Young* was the first steamship to pass up the waterway to Rotterdam. This was an important development: vessels could now get up to Rotterdam independent of tides, and fixed schedules were introduced. In 1875 the Rotterdam service was made a daily one, presumably with the introduction of what was to be for many years the crack ship of the fleet, the p.s. *Claud Hamilton*. She was the largest vessel which had up to that time been put on the service, having two funnels and masts.

She had an imposing appearance, was of practically 1,000 tons gross and was driven by 2,000 h.p. compound oscillating engines. She was 265 ft. long and was 30 ft. in beam.

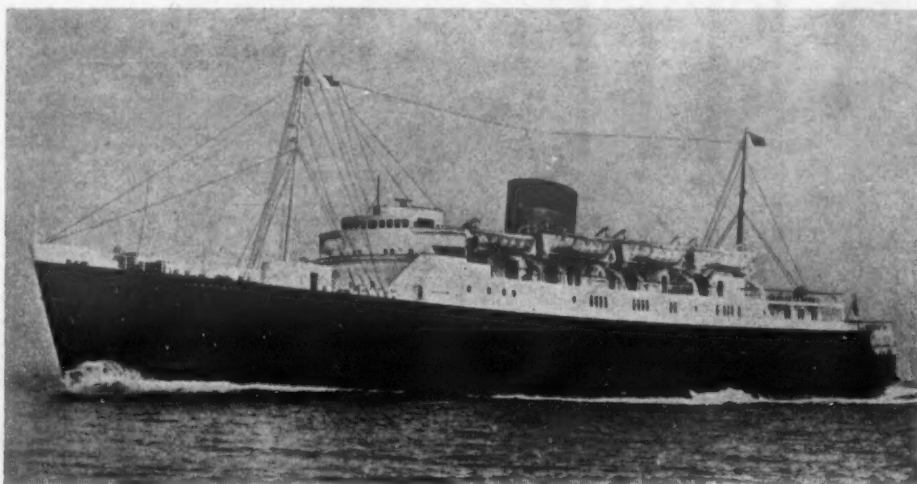
As the years went by improvements were made and new ships added—the Antwerp service became thrice weekly and by 1882 every weekday. Opening of the next decade brought the innovation of boat trains with six-wheel rolling stock. Liverpool Street Station, London, was opened and in 1882—a major event—Parkston Quay, about 2,000 ft. long, and built on piles, was opened as the Harwich services had for some time past been too cramped at Harwich itself. Cargo services increased with passenger traffic and there were three sailings each week to Rotterdam from September, 1887.

### The Hook Reached

The next milestone was the opening of the Hook of Holland in 1893 which point the Holland Railway had reached. From then until 1904 the Rotterdam steamers called there but in the latter year the Hook of Holland became the terminal port for the passenger service, which it has remained ever since. The Rotterdam service was then made a cargo service only. This led to an appreciable reduction in overall journey times and



Sea routes from British ports to the Continent indicating the extensive coverage provided through Harwich



s.s. "Amsterdam," built in 1950, is one of the three vessels which maintain the Harwich—Hook of Holland service

Dover—Calais service where steamers of much greater tonnage were operating and in 1831 the Post Office packet services were put out to tender, with the result that this service was transferred to the Thames and, for the time being, it was the end of Harwich as a packet station.

### Endeavours to Restore Services

In June, 1846, on the occasion of the opening of the Eastern Union Railway, an attempt was made to reopen the service to Rotterdam but this was not successful. Further ventures in 1854, 1855 and 1857 failed likewise. In 1863, however, the Scheldt, closed for over 200 years, was reopened, and Antwerp and its economic hinterland rapidly gained in importance.

In fact, the Great Eastern Railway opened its steamship services in October, 1863, by starting a once weekly service to Rotterdam. For this purpose it chartered three vessels *The Blenheim*, the *Norfolk* and the *Prince of Wales*. Before the year was out the contract for carriage of Her Majesty's mails had been secured and this traffic came back to Harwich. Within 12 months a similar once-weekly service to Antwerp had been introduced. The Rotterdam service was also doubled in 1864.

The company soon turned to building its own vessels. The first to be delivered were the *Zealous* and *Avalon* built in 1864, and *Pacific* in 1865 on the Thames, the former by J. and W. Dudgeon of Poplar, later the well-known Thames Iron Works Company. The *Zealous* was built as a passenger vessel and the *Avalon* to carry both passengers and cargo. They were 230 ft. and 240 ft. long respec-

to a great increase in passenger traffic. One record gives the number of passengers as under:

1866	..	9,350
1874	..	35,390
1883	..	95,000
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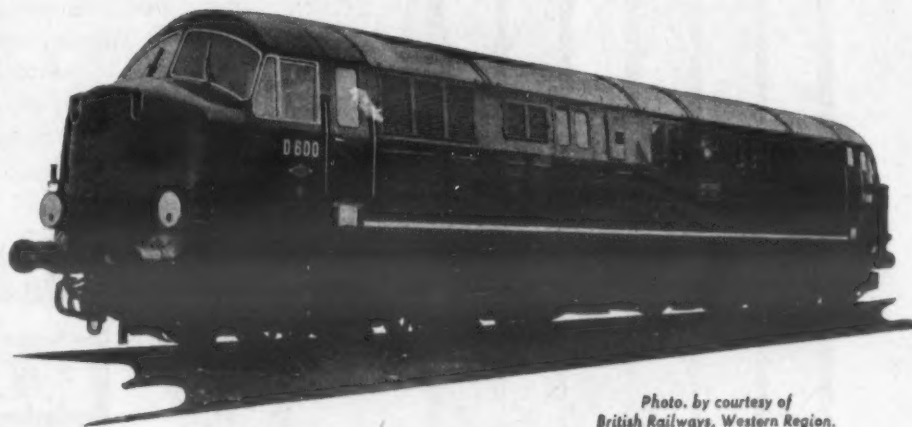
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Agents—Bellamy & Lambie, Johannesburg



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## IMPORTANT CONTRACTS

## Another Australian Order

FOR the third time in six weeks Sir William Leggatt, Agent-General for Victoria, has announced a major contract for a British firm. This time the order goes to the English Electric Co., Limited, for £500,000 of electrical control equipment to be used on motor coaches serving suburban trains run by the Victoria State Railway in Melbourne. The work is part of a larger order for an undisclosed amount awarded to the English Electric company in Australia. Sir William said, "As someone who believes in the expansion of the Commonwealth I hope these awards are but the beginning of still larger fruits to United Kingdom firms, who, by their enterprise, have made Victoria one of the great new industrial centres serving the Pacific area, as well as Australia." Other contracts were awarded by the Victorian State Electricity Commission to Babcock and Wilcox and Metropolitan-Vickers for £5 million and £4.5 million respectively.

## Roofing at Chiswick

London Transport has placed a contract with G. C. Horsburgh and Co., Limited, London, W.6, for the provision of roof insulating linings for installation during the reorganisation of Chiswick Works and consequent rebuilding work.

## Gardner Marine Engine Orders

The growing faith in the diesel engine for country craft fishing boats in India is evident from recent orders received by Norris, Henty and Gardners, Limited, Patricroft. During the past month orders have been received for 24 marine propulsion diesels of the LW type for installation in country craft operating in the Arabian Sea along the coast of the State of Bombay and comprising two-, three- and four-cylinder units. The company has also recently received its 13th order in five years for LW marine engines for the propulsion of lifeboats of the Royal National Lifeboat Institution. The present order comprises eight five- and six-cylinder engines and although the destination of these units is not yet decided it is significant that Gardner-engine lifeboats now operate from 15 lifeboat stations in the United Kingdom.

## SHIPPING and SHIPBUILDING

## Chancellor on Taxation

REMARKS by the Chancellor of the Exchequer at the dinner of the Chamber of Shipping last week, that he recognised the very special position of the shipping industry and would gladly talk with its representatives about the level of taxation, have been warmly welcomed in shipping circles and it is probable that a deputation will wait on him at an early date. Mr. R. D. Ropner, president of the Chamber, stressed that 1,250,000 tons gross of British shipping are lying idle and that there is a further one million tons gross for which orders have been placed or berths reserved and which will almost certainly "come to nothing." Referring to the "flag of convenience" owner "who runs his vessels virtually free from tax," Mr. Ropner said he believed the answer must be found, at any rate in part, in the field of taxation. He believed it was not possible in the long run for owners who are taxed to compete with those who are not.

## Antwerp—Rotterdam Service

WHEN the B.R. ship *Colchester*, launched last week, comes into service in the New Year the Antwerp—Rotterdam services will have been completely re-equipped with modern ships and in the whole Harwich fleet there will only be one pre-war vessel. The *Isle of Ely* and the *Colchester*, sister ships, will be equipped to deal with the wide variety of import and export traffic flowing by this route. They will be capable of carrying up to 40 large containers and extensive palletisation of suitable freight is envisaged.

## Hull Service Improvement

SPEAKING at the launch of the Associated Humber Lines ship *Melrose Abbey*, Mr. H. A. Short, chairman of the owners, referred to the reconstruction of the Riverside Quay at Hull, by the B.T.C. Since its wartime destruction, he said, they had had perforce to maintain a service for passengers and perishables and urgent cargoes from one of the enclosed docks, and this had been somewhat inconvenient because departures and arrival times had had to vary from week to week according to the state of the tide. It was hoped that the new quay would be completed by about the end of the year and the two new ships (the *Melrose Abbey* and *Bolton Abbey*) would then be able to sail at regular scheduled timings. This, together with the quicker crossing, would constitute a great improvement which would be appreciated by shippers and passengers alike. Both ships have been designed for containers and with an eye to palletised cargo.

## U.K. Yards Drop Behind

ANOTHER leader in the building industry has come out against demarcation disputes, restrictive practices and unofficial stoppages in the shipyards. In the face of a buyer's market and fierce international competition, they were "sheer lunacy," said Sir Charles Connell, chairman of Charles Connell and Co., Limited, Scotstoun, and a past president of the Shipbuilding Conference and the Shipbuilding Employers' Federation, at a conference on industrial relations, organised by the British Employers' Confederation, in London. The British proportion of world shipyard capacity had fallen from 34 per cent in 1938 to 15.8 per cent in 1958, he said, while world shipbuilding potential output had risen from 3,000,000 gross tons to 9,000,000 tons. In 1950 Germany launched 154,000 tons and Japan 348,000 tons. In 1955 Germany launched 928,000 tons and Japan 828,000 tons. The Shipbuilding conference reported this week that in the year ended September 30 orders were received for 167 ships of 638,684 tons gross, compared with 350 ships of 2,708,147 tons gross in the same period in 1956-57.

## TENDERS INVITED

THE following items are extracted from the Board of Trade Special Register Service of Information. Inquiries should be addressed, quoting reference number where given, to the Export Services Branch, Board of Trade, Lacon House, Theobalds Road, London, W.C.1.

**November 5—Vietnam.**—International Co-operation Administration for one 5-ton and one 2-ton petrol-engined FORK-LIFT TRUCKS, both complete with road lighting, driver's headguard, extension forks and one year's spares. Tenders to the Central Purchasing Authority, P.O. Box 131, Saigon. (ESB/24522/58/ICA.)

**November 10—Burma.**—International Co-operation Administration for three four-wheel-drive UTILITY TRUCKS and two two-wheeled TRAILERS for same. Tenders to the Director-General, Union of Burma Applied Research Institute, Kanbe, Rangoon. (ESB/24520/58/ICA.)

**November 10—Uruguay.**—State Railways Administration for 1,750 silicon-manganese STEEL SPRINGS and 376 AXLES for 30-40 ton capacity railway wagons. Tenders through local agent to Administracion de Ferrocarriles del Estado. (ESB/24095/58.)

**November 13—Greece.**—Finance Ministry for three 100-120 h.p. diesel MARINE ENGINES with STEERN GEAR and three petrol-electric GENERATOR SETS. Photo copies of tender documents from Export Services Branch, B.O.T., price 5s. (ESB/24652/58.)

**November 15—India.**—International Co-operation Administration for six 5 ft. 6 in. GAUGE REFRIGERATED WAGONS for carrying fish, 55 ft. long by 10 ft. 8 in. wide. Tenders to the Government of India, India Supply Mission, 236 Massachusetts Avenue N.W., Washington 8, D.C., U.S.A. (ESB/25260/58/ICA.)

**Export Opportunity—Sweden.**—AB Bil and Truck, Odinsplatsen 9, Gothenburg C, wishes to represent a United Kingdom manufacturer of large MARINE DIESEL ENGINES. (ESB/22082/58.)

## CLASSIFIED ADVERTISEMENTS

## BUSINESS FOR SALE

RURAL Transport Service comprising 30 omnibuses and 10 trucks. Profitable business. Owners retiring. G.I.A., 26 Beeston Street, Kingston, Jamaica, West Indies.

## SITUATIONS VACANT

ASSISTANT to the Chief Clerk required by Road Transport undertaking of large trading organisation in North-East Manchester. A good knowledge of accountancy, general office routine, together with the ability to organise and control staff is essential. Some knowledge of the Holieth system would be an advantage. Superannuation fund. Applications, stating age, qualifications and experience should be received not later than October 31, 1958, addressed to Box No. 3799, MODERN TRANSPORT, 3-16 Woburn Place, London, W.C.1.

MANAGER required to operate small fleet of vehicles. Manchester haulage business. Must be of proven ability in all branches. Good salary and excellent prospects for keen man. Applicants must have initiative, drive and satisfactory testimonials. A specialist is sought having technical knowledge and first-class experience of petrol-diesel motors. Write in confidence, giving full details, age, experience, etc., to Box No. 3800, MODERN TRANSPORT, 3-16 Woburn Place, London, W.C.1.

TRANSPORT. Man, 20-25, for Transport Office of large concern on Great West Road, Brentford. Some experience driver supervision, completion usual forms and returns; knowledge London area; salary £9-£10 per week; pension scheme, canteen. Write Box 3798, MODERN TRANSPORT, 3-16 Woburn Place, London, W.C.1.

## SITUATION WANTED

TRANSPORT. First-class man, 36, requires post. Supervisory or one of trust; excellent all round experience of transport, supervision of drivers and security; residing West London. Box No. 3801, MODERN TRANSPORT, 3-16 Woburn Place, London, W.C.1.

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## SOCIAL AND PERSONAL

### Esso Research Centre

NEW Esso research laboratories near Abingdon were opened on Monday this week by Viscount Hailsham, Lord President of the Council. Built and equipped at a cost of approximately £1,000,000, these laboratories employ over 300 technologists engaged on research into the quality of petroleum products, and research aimed at discovering new products and new methods of manufacture. This is the largest Esso research centre in the Eastern hemisphere and is intended to serve the interests not only of the Esso Petroleum Co., Limited, in the U.K. but also of all other Esso companies operating in Europe and North Africa. Last year Esso research throughout the world cost over £20 million.

Captain L. R. Ambrose has been appointed general manager for the United Kingdom and Europe for Qantas Empire Airways.

Mr. H. B. Taylor, M.Inst.T., assistant operating superintendent, Southern Region, B.R., since 1948, will be retiring on October 31, after 46 years' railway service. He joined the L.N.W.R. at Colwyn Bay in 1912. In 1944 he was seconded to the Railway Executive Committee as operating assistant to the chairman of the operating committee, during which time he was the railway member of the shipping diversion room at the Ministry of Transport. He was appointed district operating manager (London Midland) in 1946. Mr. Taylor had a special responsibility for the organisation of wagon control and distribution and was one of the original team who, when the Government requisitioned privately-owned wagons before the 1939-45 war, set up the organisation known as the inter-company freight rolling stock control. This organisation is still functioning in the B.T.C. During the 1914-18 war he joined the Armed Forces and served in France with the Royal Engineers (No. 6 Light Railway Operating Company) and was awarded the Meritorious Service Medal.



Mr. H. B. Taylor

Sir John Benstead, C.B.E., deputy chairman of the British Transport Commission, has accepted the presidency of the Railway Benevolent Institution for the year 1959. Mr. C. P. Hopkins, general manager of the Southern Region, at the unanimous request of the board, has accepted the chairmanship for a further year.

We record with regret the death of Mr. T. C. E. Rowland, formerly chief engineer of Birmingham City Transport. Both he and his successor, the late Mr. Harry Parker, pioneered and developed the R.P. automatic chassis lubricator, R.P. brake adjuster and R.P. filler cap, the patents of which were licensed to the Clayton Dewandre Co., Limited.

We record with regret the death of Major Malcolm S. Speir, who was chief officer of the L.M.S.R. in Scotland when he retired in 1947. He entered the service of the Midland Railway in 1905 and after the amalgamation of 1923 was assistant general superintendent of the L.M.S. Northern Division. He was manager and secretary of the L.M.S. Northern Counties Committee in Ireland from 1931 until the above-mentioned appointment in 1941.

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An international jury has awarded the grand prix for the best precision mechanics exhibit at the Brussels Exhibition to British Timken, Limited. The Duke of Edinburgh is here seen visiting the stand, which was designed by Mr. L. Dorricott, manager of the British Timken publicity department

Mr. R. A. Emerson has been appointed vice-president of the Canadian Pacific Railway and Mr. G. H. Baillie becomes vice-president, operations.

Six employees of George Ewer and Co., Limited, were recently presented with long-service awards. All were for 25 years' service and Messrs. L. C. Poulter, C. J. Brimstead, J. Redshaw and E. Fenwick received gold watches, whilst Messrs. G. Siegel and B. Lambert chose canteens of cutlery. Since the inception of these awards 26 presentations have been made and 23 of the recipients are still with the company.

In pursuance of the Western Region policy of decentralisation of management, the following further appointments are announced:

Mr. L. Edwards, to be divisional traffic manager, Bristol.  
Mr. G. A. V. Phillips, to be divisional traffic manager, London.  
Mr. R. C. Hilton, to be divisional traffic manager, Birmingham.  
Mr. J. H. F. Page, to be district traffic superintendent, Cardiff.  
Mr. J. F. M. Taylor, to be district traffic superintendent, Swansea.  
Mr. W. J. Morris, to be district traffic superintendent, Newport.  
Mr. L. A. Morgan, to be operating officer, divisional traffic manager's office, Cardiff.  
Mr. H. S. Jenkins, to be commercial officer, divisional traffic manager's office, Cardiff.  
Mr. C. H. D. Read, to be running and maintenance officer, divisional traffic manager's office, Cardiff.  
Mr. I. C. Barron, to be staff assistant, divisional traffic manager's office, Cardiff.

Under the revised organisation, the divisional traffic managers will co-ordinate and control all commercial and operating functions in their respective areas, with responsibility to the assistant general manager (traffic), Mr. A. C. B. Pickford.

The Royal Engineers Army Emergency Reserve (Transportation) annual dinner will be held at the Café Royal, Regent Street, on February 27, 1959.

We record with regret the death of Mr. E. W. Steele, M.I.Mech.E., M.I.E.E., formerly director and general manager of works of Metropolitan-Vickers Electrical Co., Limited. He was also chairman of Metropolitan-Vickers-Beyer, Peacock, Limited, from its formation in 1949 to 1956.

Mr. B. Homfray Davies, who for 25 years was managing director of Metropolitan-Cammell-Weymann, Limited, has been appointed managing director of Arusha Industries, Limited. Mr. Homfray-Davies remains managing director of Aero Maintenance Equipment, Limited (one of the Arusha Group), which manufactures and distributes in this country Bennes-Marrel hydraulic lifting and haulage equipment. The Steel Company of Wales has ordered a number of these units.

We regret to record the death, at the age of 70, of Colonel G. W. Hayter, O.B.E., M.Inst.T., former general manager and chief engineer, Northern General Transport Co., Limited, and associated companies. At the time of his retirement at the end of 1954 he had served the company for 32 years. Since that time Colonel Hayter had acted as technical consultant to the Linjebuss coach concern in Sweden and he joined the board of Guy Motors, Limited, in 1956. Educated at Christ's Hospital, London and Horsham, Mr. Hayter served with the Daimler and Humber companies. He joined Northern in 1922 as chief engineer, becoming general manager also in 1936. He was responsible for the development of the Northern underfloor-engined range of buses and coaches. During the 1914-18 war Colonel Hayter was Inspector of Motor Transport for the British forces in Italy.



The late Mr. Hayter

Mr. P. R. Packham, B.Sc.(Eng.), has been appointed a director of A. Packham and Co., Limited, and of Griffin Brothers (Highbury), Limited.

The Western Region has announced the following alterations in title:

Mr. H. G. Bowles, assistant general manager (administration), to be assistant general manager.  
Mr. A. W. J. Dymond, stores superintendent, to be supplies and contracts manager.

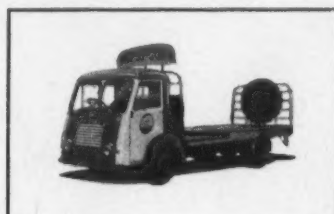
Mr. Trevor Guy, service director of Guy Motors, Limited, has left the company's Wolverhampton headquarters for a six weeks' tour of the Far East, visiting Ceylon, Singapore, Penang, Hong Kong, Bangkok, India and Pakistan.

A total of 411 drivers employed by Hall and Co., Limited, qualified for safe driving awards from the Royal Society for the Prevention of Accidents in the 1957 competition. One received a 15-year brooch and two 11-14 year oak leaves.

The British Electric Traction Co., Limited, announces that Mr. T. V. Woods, C.B.E., who recently joined the executive staff of the company, is being appointed to the boards of a number of associated companies. Mr. Woods was lately general manager in Bolivia of the Antofagasta (Chili) and Bolivia Railway Co., Limited.



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"That job's a bit hard on the wagon, isn't it?"  
"This HERON comes through all right, it's designed for the job. A custom built truck you know, made from the right stuff."  
"My PAX II's just turning a hundred thousand and feels good for another."  
"She certainly looks easy to load and unload, that platform is well down below average."  
"Oh yes, but then Dennis specialise in low loaders and they have a dozen different ways of getting the deck nearer the ground."  
"Dennis certainly think about the driver and they're the truck for me!"

Dennis vehicles are used extensively by large and important concerns throughout Industry and Commerce.

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Charbonnages de France (the French coal authority) have found a clean, easy way to deliver coal—by packing it in corrugated sheet steel. This pack is a specially designed triangular jerrican holding 33 pounds of coal. The coal is delivered in the can, to be tipped from it straight into the stove or grate, thus avoiding the dusty, dirty shifting of coal from sack to cellar to scuttle to fire.

## STEEL'S VERSATILITY

This is only one example of the many uses of sheet steel. Others more familiar (though no less enterprising) include sheet steel for railway carriages and wagons; guttering and steel ducting; kegs, drums, cans and cisterns; oil stoves, washing machines, refrigerators and office furniture.

The motor car industry in particular has used the increasing versatility of sheet steel to good advantage. The strength and flowing lines of today's motor car body reflect the continuous improvement in steel qualities to suit modern press shop practice.

## CONSISTENT QUALITY

Powerful presses shape a flat sheet of steel into smooth curves and crisp contours forming body panels, wings and doors—strong, light and free from distortion. Pressings such as these with their bold moulding and intricate detail require steel of consistent quality and ductility.

By its concentration on the wide continuous strip mill process, The Steel Company of Wales has been able to supply such steel in the necessary quantity, thus making a substantial contribution to the development of the motor car industry.

## INCREASING QUANTITY

The Steel Company of Wales was specifically formed to meet the growing demand for high quality steel of this type and it already makes over one-third of Britain's sheet steel. Research and development continue: new plant, planned and under construction, will push production up and up.

It has always been the policy of The Steel Company of Wales to pay particular attention to customers' specific problems, and to ensure that its products are "tailor-made" to individual requirements. If you have an industrial problem which sheet steel might help to solve, it will be worth your while to write to us or telephone Port Talbot 3161. We believe we can help.



# THE STEEL COMPANY OF WALES LIMITED

Steel Division: Abbey Works, Port Talbot, Glam. Telephone: Port Talbot 3161. Telegrams: Steel, Port Talbot